DOCUMENT RESUME

ED 187 543 SE 030 868

TITLE	The Second Assessment of Mathematics, 1977-78, Released Exercise Set.
INSTITUTION	Education Commission of the States, Denver, Colo. National Assessment of Educational Progress.
SPONS AGENCY	National Inst. of Education (DHEW), Washington, D.C.
PUB DATE	May 79
CONTRACT	OEC-0-74-0506
NOTE	366p.; Not available in hard copy due to marginal legibility of original document.
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*Educational Assessment; Elementary Secondary Education; *Mathematics Education; National Competency Tests; National Surveys; *Problem Sets; Test Construction; *Testing; *Test Items

ABSTRACT

The purpose of this released exercise set is to provide easy access to some exercises from the National Assessment of Educational Progress (NAEP) second mathematics assessment, conducted in 1977-78. Part 1 of the text explains NAEP's assessment procedures and describes the documentation provided for the various kinds of exercises in the set. Part 2 describes rationales behind the development of the attitudinal and experience questions for the 1977-78 mathematics assessment. Part 3 describes the taxonomic and content classifications used to develop and report on cognitive exercises for the 1977-78 mathematics assessment. Part 4 presents the classification scheme used to develop the released items used to measure changes in performance. Included are the exercises that were developed and assessed in the 1972-73 mathematics assessment and reused in the 1977-78 assessment. Part 5 contains two types of cross-reference tables. The remainder of the publication consists of copies of released exercises and documentation for each exercise. Attitudinal and experience exercises compose Appendix A, followed by cognitive exercises developed for the 1977-78 assessment, in Appendix B, and the exercises measuring changes from the 1972-73 assessment of mathematics in Appendix C. (Author/MK)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED187543

SE

THE SECOND ASSESSMENT OF MATHEMATICS, 1977-78

RELEASED EXERCISE SET

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
T. Pratt

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

by the
National Assessment of Educational Progress

Education Commission of the States
Suite 700, 1860 Lincoln Street
Denver, Colorado 80295

May 1979

The work upon which this publication is based was performed pursuant to Contract No. OEC-0-74-0506, of the National Institute of Education. It does not, however, necessarily reflect the views of that agency.

SE 030 868

The National Assessment of Educational Progress is funded by the National Institute of Education. It is under contract with the Education Commission of the States. It is the policy of the Education Commission of the States to take affirmative action to prevent discrimination in its policies, programs and employment practices.

This report is made pursuant to Contract No. OEC-0-74-0506. The amount charged to the Department of Health, Education, and Welfare for the work resulting in this report (inclusive of the amounts so charged for any prior reports submitted under this contract) is $27,930,530. The work culminating in this report was carried out under Dr. Roy H. Forbes, Project Director.

The cost figure cited above represents the total amount of money expended since late 1973 on assessments in art, career and occupational development, reading, writing, social studies/citizenship, science, basic life skills, mathematics and consumerism, resulting to date, in numerous reports, papers, articles, presentations and assessment materials, many of which are used in state and local assessment programs. A complete list of all such materials is available upon request.

TABLE OF CONTENTS

LIST OF EXHIBITS. iv

FOREWORD. v

INTRODUCTION. 1

PART 1 NAEP ASSESSMENT PROCEDURES. 4
- Documentation 5
- Data Included in the Exercise Set 7
- Statistics Used in the Exercise Set 7
- Definitions of Selected Reporting Groups. 8
- Scoring Guides. 9

PART 2 AFFECTIVE AND MATHEMATICAL EXPERIENCE EXERCISES FROM THE 1977-78 MATHEMATICS ASSESSMENT (APPENDIX A) 15
- Attitudes and Values in Mathematics 15
- Experiences in Mathematics. 16

PART 3 COGNITIVE EXERCISES FROM THE 1977-78 MATHEMATICS ASSESSMENT (APPENDIX B) 17
- Mathematical Process. 17
- Mathematical Content. 18

PART 4 RELEASED EXERCISES MEASURING CHANGE (APPENDIX C). 21

PART 5 CROSS-REFERENCE TABLES. 23

BIBLIOGRAPHY. 32

APPENDIX A AFFECTIVE AND EXPERIENTIAL EXERCISES FROM THE 1977-78 MATHEMATICS ASSESSMENT. 33

APPENDIX B RELEASED COGNITIVE EXERCISES FROM THE 1977-78 MATHEMATICS ASSESSMENT. 79

APPENDIX C RELEASED EXERCISES MEASURING CHANGE FROM THE 1972-73 MATHEMATICS ASSESSMENT. 301

LIST OF EXHIBITS

EXHIBIT 1. Number of Released Cognitive and Affective Exercises by Age Group or Combination of Age Groups. 2

EXHIBIT 2. Average Percentage of Scorer Agreement for Open-Ended 1977-78 Mathematics Exercises 11

EXHIBIT 3. Average Percentage of Scorer Agreement for Readministered 1972-73 Open-Ended Mathematics Exercises. 13

EXHIBIT 4. Number of Released Noncalculator Cognitive Exercises From the 1977-78 Mathematics Assessment by Process, Content Area and Age. 20

EXHIBIT 5. 1972-73 Mathematics Cognitive Abilities by Content-Area Matrix, Cognitive Abilities and/or Objectives 22

EXHIBIT 6. Released Cognitive Exercises by Specific Content in Release-Number Order. 24

EXHIBIT 7. Released Exercises Measuring Change in 1977-78 Release-Number Order 30

EXHIBIT 8. Released Exercises Measuring Change in 1972-73 Release-Number Order 31

FOREWORD

When the U.S. Office of Education was chartered in 1867, one charge to its commissioners was to determine the nation's progress in education. The National Assessment of Educational Progress (NAEP) was initiated a century later to address, in a systematic way, that charge.

Each year since 1969, National Assessment has gathered information about levels of educational achievement across the country and reported its findings to the nation. NAEP surveys the education attainments of 9-year-olds, 13-year-olds, 17-year-olds and young adults, ages 26-35, in 10 learning areas: art, career and occupational development, citizenship, literature, mathematics, music, reading, science, social studies and writing. Different learning areas are assessed every year, and all areas are periodically reassessed in order to measure possible changes in education achievement. National Assessment has interviewed and tested more than 810,000 young Americans since 1969.

Learning-area assessments evolve from a consensus process. Each assessment is the product of several years of work by a great many educators, scholars and lay persons from all over the nation. Initially, these people design objectives for each subject area, proposing general goals they feel Americans should be achieving in the course of their education. After careful reviews, these objectives are given to exercise (item) writers, whose task it is to create measurement tools appropriate to the objectives.

When the exercises have passed extensive reviews by subject-matter specialists, measurement experts and lay persons, they are administered to probability samples. The people who compose these samples are chosen in such a way that the results of their assessment can be generalized to an entire national population. That is, on the basis of the performance of about 2,500 9-year-olds on a given exercise, we can make generalizations about the probable performance of all 9-year-olds in the nation.

After assessment data have been collected, scored and analyzed, National Assessment publishes reports to disseminate the results as widely as possible. Not all exercises are released for publication. Because NAEP will readminister some of the same exercises in the future to determine whether the performance level of Americans has increased, remained stable or decreased, it is essential that they not be released in order to preserve the integrity of the study.

INTRODUCTION

The purpose of this released exercise set is to provide easy access to released exercises from the National Assessment of Educational Progress (NAEP) second mathematics assessment, conducted in 1977-78. Exercises and documentation are in loose-leaf format to facilitate sorting and copying. Unless specific copyright information is included with the exercise documentation, exercises are in the public domain; therefore, there are no restrictions on copying or using the exercises in this booklet. Documentation has been kept to a minimum. It includes basic reference numbers, content and objective classifications National Assessment has found useful, and timing and administration data for each age group.

Detailed achievement data on group performance or changes in performance from previous assessments are not included in this report; they will be published in later reports. Similarly, detailed documentation of the objectives and development process is not included, but is being published concurrently in *Mathematics Objectives, Second Assessment* (1978) available from National Assessment.

Exercises were administered to 9-year-olds, 13-year-olds and 17-year-olds.[1] Some exercises were administered to only one age group, others to two or more age groups. The number of released cognitive (knowledge, skills, etc.) and affective (attitudinal) exercises for each age group or combination of age groups is shown in Exhibit 1.

Part 1 of the text briefly explains NAEP's assessment procedures and describes the documentation provided for the various kinds of exercises in the set.

Part 2 describes rationales behind the development of the attitudinal and experience questions for the 1977-78 mathematics assessment. This was National Assessment's first effort to measure the affective domain of mathematics. The entire set of attitudinal and experience exercises has been released and is included as Appendix A of this set.

---

[1] During some years National Assessment has administered exercises to supplementary samples of 17-year-olds who were not in school. However, during the 1977-78 assessment, only 17-year-olds enrolled in school were sampled.

EXHIBIT 1. Number of Released Cognitive and Affective Exercises by Age Group or Combination of Age Groups

Cognitive Exercises

	Calculator Not Used*				Calculator Used*			
	Age 9	Age 13	Age 17	Total	Age 9	Age 13	Age 17	Total
Age 9 only	25	--	--	25	7	--	--	7
Age 13 only	--	12	--	12	--	0	--	0
Age 17 only	--	--	44	44	--	--	2	2
Ages 9 and 13	26	26	--	26	0	0	--	0
Ages 13 and 17	--	71	71	71	--	6	6	6
Ages 9, 13 and 17	29	29	29	29	2	2	2	2
TOTAL	80	137	144	207	9	8	10	17

Affective and Mathematical Experience Exercises

	Age 9	Age 13	Age 17	Total
Age 9 only	10	--	--	10
Age 13 only	--	2	--	2
Age 17 only	--	--	3	3
Ages 9 and 13	0	0	--	0
Ages 13 and 17	--	13	13	13
Ages 9, 13 and 17	0	0	0	0
TOTAL	10	15	16	28

---

*One booklet of exercises at each of the ages (9, 13 and 17) was administered using an electronic hand-held calculator. Some of these items were also administered in other booklets without calculators. Hence, the released exercises administered with calculators have been tallied separately.

Part 3 describes the taxonomic and content classifications used to develop and report on cognitive exercises for the 1977-78 mathematics assessment (Appendix B). About one-third of these exercises have been released. The remainder have not been released because National Assessment will readminister them in the future to determine whether the performance level of young Americans has changed.

Part 4 presents the classification scheme used to develop the released items used to measure changes in performance (Appendix C). These are the exercises that were developed and assessed in the 1972-73 mathematics assessment and reused in the 1977-78 assessment. Between one-third and one-half of these change exercises have been released. The exercises are reported using the reporting classification scheme from Part 3.

Part 5 contains two types of cross-reference tables. For readers interested in content classifications, there are tables of the released cognitive mathematics exercises classified by mathematics content. These content categories are more specific than the categories described in Part 3. To compare data here with data from the first mathematics assessment reports, there are cross-reference tables of 1972-73 assessment report numbers and 1977-78 assessment release numbers.

The remainder of the exercise set consists of copies of released exercises and documentation for each exercise. Attitudinal and experience exercises compose Appendix A, followed by cognitive exercises developed for the 1977-78 assessment, in Appendix B, and the exercises measuring changes from the 1972-73 assessment of mathematics, in Appendix C.

PART 1

NAEP ASSESSMENT PROCEDURES

All exercises in this set were administered to three different age groups of students. Most exercises were administered in booklets (packages) containing 36 to 44 exercises. One package for each age level required the use of a hand calculator and contained 23, 25 and 32 exercises at ages 9, 13 and 17, respectively. Exercise packages were accompanied by paced audiotapes. The announcer read the text and response options for each exercise and told respondents when to go on to the next exercise. The total administration time for each package, including introduction, sample exercise and background questions, was about 45 minutes.

Age groups and assessment dates were as follows:

Age Group	Birthdates	Assessed During
13-year-olds	January to December 1964	October to December 1977
9-year-olds	January to December 1968	January to February 1978
17-year-olds	October 1960 to September 1961	March to May 1978

Each package of exercises was administered to a national sample of from about 2,100 to about 2,500 students; no student took more than one package. About 40% of the exercises were multiple-choice with a machine-scorable oval (foil) to the left of each response choice. The remainder of the exercises were open-ended and required the respondent to draw diagrams, graphs, points, write a short answer or an equation, perform routine calculations or solve a problem. The scoring guides used to categorize responses for these exercises are included following each open-ended exercise. (Scoring guides are explained toward the end of this chapter.)

Each exercise is reproduced essentially as it was seen by the respondent. It is accompanied by documentation containing information about exercise administration. This information is described in the following example, using as a sample the documentation for Exercise RD11711.

A.	**Release #:**	RD11711		
B.	**NAEP #:**	5-D11711-919-23		
C.	**1977-78 Content Area:** **1977-78 Objective:**	D. Measurement Experiences with Mathematics		
D.	**Exercise Type:** **Stimulus Type:**	Multiple Choice Text/Tape		
E.	**Overlap:** **1977-78 Package-Exercise:**		13 09-41	17 09-39
F.	**Timing: (in seconds)** **Exercise Total Time**		32	31

A. Release Number

The 1977-78 release number contains seven characters[1] beginning with the letter R and uniquely identifying each exercise. The second character from the left will be a letter from A through E, or the digit zero. The letters refer to the content area to which the exercise refers. Referencing is as follows:[2]

A = Numbers and numeration
B = Variables and relationships
C = Shape, size and position
D = Measurement
E = Other topics

Release numbers with zeros in this position are mathematics experience exercises given to all respondents at the age(s) for whom the exercise was written.

---

[1] Exercises that were administered with the electronic hand calculator have an eight-digit release number. The right-most digit in the release number for these exercises is a "K."

[2] There are two exceptions to this referencing scheme: D11711-919-23 and E80511-919-23.

B. NAEP Number

In most cases, the NAEP number and the release number for an exercise are identical, except that the release number has an R as the first character. The NAEP number is a unique number assigned to each exercise for documentation and reference purposes. NAEP numbers also contain other numbers that may be useful to the reader.

For example, the first attitudinal and experience exercise has the release number RD11711. The full NAEP number associated with this exercise is 5-D11711-919-23, where: "5" in the first position indicates that this is a mathematics exercise (as are all the exercises in this booklet); "919" is an assessment indicator (the assessment indicators in this booklet are: 919 -- Year 09 [1977-78] exercise used for the first time in Year 09; 429 -- Year 04 [1972-73] exercise used for the second time in Year 09); and "23" in the last two positions indicates the age groups assessed (for this exercise, ages 13 and 17). The age group indicator shows what age groups responded to the exercise in 1977-78. The values are: 1 = age 9; 2 = age 13; and 3 = age 17. The digits "123" as the age group indicator would show that the exercise was administered to 9-, 13- and 17-year-olds.

C. Content Classifications and Objectives

All the exercises administered in the 1977-78 assessment are classified by content area. Most are also classified by assessment objective. These classifications were used to guide the development of the 1977-78 mathematics assessment. All the exercises from the first mathematics assessment have been classified by the 1977-78 content area and assessment objective so that they could be reported with the 1977-78 items. In addition to this information, all change exercises also list their 1972-73 assessment content area and objective classification.

D. Exercise Type and Stimulus Type

Exercises are classified as either multiple-choice or open-ended; this classification is presented as the exercise type. Some exercises have multiple-choice parts and some open-ended parts.

Most exercises have both a text and a tape-recorded stimulus. Some exercises also have additional stimulus materials, such as graphs, tables and pictures, while a few exercises have only a taped stimulus.

E. Package and Exercise Number

Exercises were assembled into packages for administration to each age group. For each group, the 1977-78 package and exercise number is shown. For example, the number "09-41" denotes package 9, exercise 41. There is not, in general, any correspondence between package numbers for various ages. For example, package 6 for age 13 may contain some of the same exercises as package 8 for age 17.

F. Exercise Time

As mentioned, exercise packages were administered by paced audiotapes. For each age group, the total time allowed (in seconds) for an exercise in the 1977-78 assessment is shown. The total time is the time allotted for reading the exercise and for responding to it. Actual tapescripts, showing exactly what was read and how the total time was broken down into reading and responding times, are available from National Assessment. Times given for exercises measuring changes are the 1977-78 assessment times. Unless there is a footnote to the contrary, the 1972-73 assessment times were identical to those in the 1977-78 assessment.

Data Included in the Exercise Set

In Appendix A of this volume, estimates of national p-values are reported for each foil of each part of every affective exercise. These data are placed directly on copies of the exercises. To provide room for the data the response ovals (foils) used by the respondents were removed. A column of data labeled "no response" is provided for each exercise part. This data is an estimate of the percentage of respondents who did not respond to the exercise part in question. However, "no response" was not a response option for an exercise.

A few of the exercises in Appendix A have relatively high nonresponse rates. These high nonresponse rates seem to be, at least in part, due to exercise placement within the package.

For exercises given to both ages 13 and 17, the data is presented on two lines. On all these exercises the age 13 data is given on the upper line and the age 17 data on the lower one.

In Appendixes B and C of this volume, correct answer estimates of p-values are provided for the nation and selected population groups. Estimates of the standard errors of these p-values are also provided.

The data for most cognitive exercises will be found below the exercise documentation, and will continue on to the next page when necessary.

Statistics reported and definitions of the selected population groups follow.

Statistics Used in the Exercise Set

Since National Assessment uses a national probability sample to collect data, the findings are reported as estimates of the percentage of individuals in a given group who would successfully complete a particular exercise if everyone in that group in the country had been tested. Thus, when we say that

"85% of the 9-year-olds gave correct responses," 85% is an estimate of the proportion of all 9-year-olds in the country who would have answered correctly if all 9-year-olds had been assessed.

These percentages are always subject to sampling error since they are computed from a sample rather than from the entire population. The standard errors of these percentages provide a measure of the sampling variability among all possible samples. The standard error of a sample statistic can be used to construct a confidence interval for the estimate -- for example, the interval from two standard errors below to two standard errors above the particular sample value would include the average of all possible values in about 95% of the samples. Numerical values of standard errors in this volume are those for the percentages of acceptable performance.

Standard errors of differences in percentages between national and group performance are not provided. However, when the difference between the national percentage and the group percentage is twice the standard error of that difference, the percentage estimating the performance of the group is asterisked. This indicates that a difference this large would occur in only about 5% of the samples by chance and therefore is most likely not an artifact of sampling variability.

Definitions of Selected Reporting Groups

In addition to results for the nation as a whole, National Assessment reports performance of various groups within the national population. Definitions of those groups reported in this volume follow.

Age

Results are reported for all persons enrolled in public or private schools who were 9, 13 and 17 years old at the time of the assessment.

Sex

Results are reported for males and females.

Community Size

The subcategories within this classification are defined on the basis of the size of the community in which a student's school is located.

Big cities (BC). Schools in this subcategory are located in cities having populations greater than 200,000.

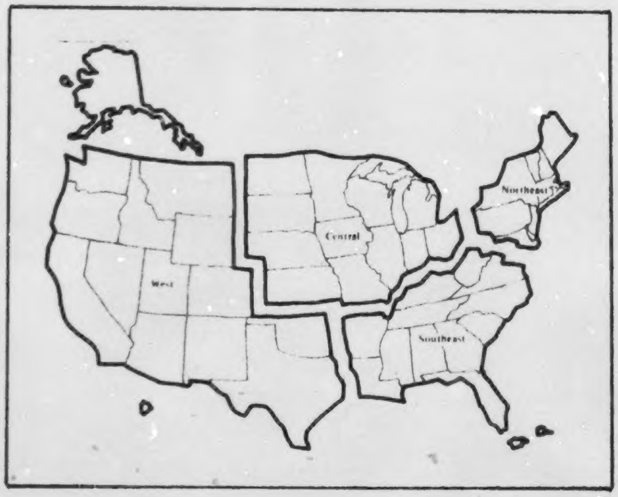
Fringes around big cities (FABC). These schools are in urbanized areas near or around cities having populations greater than 200,000.

Medium cities (MCTY). These schools are in cities with populations between 25,000 and 200,000 that are not urbanized areas around big cities.

Smaller places (SMPL). Schools in this subcategory are located in open country or in places with populations less than 25,000 that are not in big-city fringes.

Region

Results are reported for students living in the following regions: West, Central, Southeast and Northeast. States included in each region are indicated on the following map.



Modal Grade

The modal grade is the school grade in which most (70-75%) students in a specific age group are found. The modal grades for each age group are: age 9 -- modal grade 4; age 13 -- modal grade 8; and age 17 -- modal grade 11.

A state or district that conducts an assessment of grades 4, 8 or 11 and tabulates results separately for students who are 9, 13 or 17 years old (according to National Assessment's age definition) will be able to compare its results to National Assessment's modal-grade results.

Scoring Guides

Open-ended exercises were scored by specially trained scorers. To help assure consistent scoring, National Assessment developed detailed scoring guides for those exercises. A scoring guide defines acceptable and unacceptable responses for an item. The acceptable and unacceptable categories are usually further subdivided into finer categories to describe common responses or types of responses that are of substantive interest.

A two-digit classification system is used for coding each response.

00 = No response
10-19 = Categories of acceptable responses
20-29 = Categories of unacceptable responses
39 = "I don't know" responses

There is one exception to this rule in the mathematics assessment. Exercise RA11346 uses only a single-digit classification scheme.

0 = No response
1-2 = Categories of unacceptable responses
3-5 = Categories of unacceptable responses
9 = "I don't know" responses

Many of the exercises from the 1972-73 assessment were open-ended. To assure scoring consistency, responses from the 1972-73 assessment were rescored simultaneously with the 1977-78 responses.

As part of the quality-control procedures used during the scoring of open-ended exercises administered in the 1977-78 assessment, samples of responses were periodically drawn for multiple scorings. That procedure was developed to monitor scorers' consistency. Each sample of exercise responses was selected randomly and was read and scored by a randomly selected scorer. These scores were recorded on separate forms designed for the quality-control procedure. Later, the sample exercise responses again were scored independently by another scorer, and scores were recorded as usual on the exercise page. These scores were then added to the quality-control forms by another staff worker, and the two category assignments for each response were compared for consistency.

Exhibits 2 and 3 display the average percentage of agreement between the twice-scored quality-control exercises. For each released open-ended exercise the percentage of agreement has been averaged across exercise parts and across the multiple readings for each age group to which the exercise was given. Exhibit 2 presents the percentage of scorer agreement for released exercises from the 1977-78 assessment but not from the 1972-73 assessment. Exhibit 3 presents the percentage of scorer agreement for exercises used in both the 1972-73 and 1977-78 assessments. The information is arranged in release-number order. NAEP numbers and the age overlaps are also indicated for the exercises. The number of pairs of category assignments included in the computation of the percentage of scorer agreement ranges from about 30 pairs to nearly 400 pairs. When scoring was begun, more samples were used than were used near the end of the scoring process. The average percentages of scorer agreement in Exhibit 2 range from 91.3% to 100%, and range from 89.9% to 100% in Exhibit 3. Most scorer agreements tended to be greater than 95%, however.

EXHIBIT 2. Average Percentage of Scorer Agreement for Open-Ended 1977-78 Mathematics Exercises

Release Number	NAEP Number	Age Overlap	Age 9 Avg. % Agreed	Age 13 Avg. % Agreed	Age 17 Avg. % Agreed
RA10521	A10521	1	100.0		
RA11346	A11346	2		99.2	
RA12021	A12021	23		98.5	99.3
RA13031	A13031	23		97.5	95.4
RA13732	A13732	23		97.8	97.8
RA14721	A14721	2		99.7	
RA20232	A20232	23		97.2	98.1
RA21632	A21632	2		97.9	
RA22321	A22321	1	98.8		
RA23832	A23832	123	96.1	99.6	98.1
RA30321	A30321	123	99.4	100.0	99.2
RA30321K	A30321K	1	99.6		
RA31141	A31141	12	99.6	99.6	
RA31621	A31621	23		97.7	96.7
RA31732	A31732	23		97.7	98.4
RA31921	A31921	23		98.0	98.3
RA32221	A32221	1	98.3		
RA32221K	A32221K	1	99.6		
RA32321	A32321	1	99.2		
RA33021	A33021	23		98.5	99.1
RA33231	A33231	23		99.5	100.0
RA35941K	A35941K	1	100.0		
RA36711	A36711	1	99.5		
RA37211	A37211	1	99.5		
RA41521	A41521	23		98.3	97.8
RA42421	A42421	1	99.3		
RA44221	A44221	23		98.1	98.2
RA44221K	A44221K	1	99.8		
RA46721	A46721	23		98.8	96.4
RA46721K	A46721K	23		98.8	97.3
RA47611	A47611	1	99.1		
RA48131	A48131	12	98.4	98.7	
RA48343	A48343	2		97.3	
RA48343K	A48343K	23		99.6	96.7
RA51032K	B22001K	23		96.2	94.4
RA52723	A52723	3			93.3
RA60421	A60421	123	98.6	99.3	99.2
RA60942	A60942	123	99.2	98.7	98.9
RA60942K	A60942K	1	98.0		

EXHIBIT 2 *(Continued)*. Average Percentage of Scorer Agreement for Open-Ended 1977-78 Mathematics Exercises

Release Number	NAEP Number	Age Overlap	Age 9 Avg. % Agreed	Age 13 Avg. % Agreed	Age 17 Avg. % Agreed
RA70643	A70643	123	97.6	99.1	94.3
RA70943	A70943	23		99.1	98.5
RA71043	A71043	23		93.2	92.1
RA80442	A80442	23		98.2	98.1
RA92944	A92944	3			97.3
RA92944K	A92944K	3			98.1
RA93944	A93944	3			98.5
RA93944K	A93944K	23		97.9	99.6
RB20925	B20925	3			93.2
RB21225	B21225	3			91.3
RB21725	B21725	12	98.3	98.7	
RB22525	B22525	3			97.7
RB23125	B23125	23		94.1	91.5
RB24731	B24731	23		96.1	96.0
RB25042	B25042	3			92.4
RB25242	B25242	3			98.5
RB25525	B25525	3			96.5
RB40547	B40547	23		98.8	97.5
RB50623	B50623	12	96.6	99.8	
RC20643	C20643	23		97.3	97.3
RC90743	C90743	2		97.0	
RD20522	D20522	23		98.1	97.4
RD30222	D30222	12	98.3	97.3	
RD40922	D40922	23		93.7	94.4
RD50532	D50532	12	99.8	99.3	
RD60232	D60232	123	98.6	97.8	98.8
RD91441	D91441	3			96.9
RD91942	D91942	2		97.3	
RD92442	D92442	3			93.7
RD93742	D93742	3			95.5
RD94043	D94043	3			100.0
RD94143	D94143	23		98.7	97.3
RE70261K	E70626K	23		99.6	99.7
RE70565K	E70565K	23		99.2	99.6
RE71361K	E71361K	1	99.3		
RE71565K	E71565K	1	98.0		
RE71761K	E71761K	3			97.6

EXHIBIT 3. Average Percentage of Scorer Agreement for Readministered 1972-73 Open-Ended Mathematics Exercises

Release Number	NAEP Number	Age Overlap	Age 9 Avg. % Agreed	Age 13 Avg. % Agreed	Age 17 Avg. % Agreed
RA10331	A11003	1	99.6		
RA13532	A23009	23		97.7	98.7
RA20641	C50003	23		98.5	98.3
RA21032	K52029	12	99.1	98.2	
RA21232	K30006	12	98.2	98.4	
RA21341	C20006	123	99.4	97.8	98.9
RA25211	A21029	1	98.3		
RA30221	C10009	123	99.3	100.0	99.6
RA30421	C10006	12	99.8	99.8	
RA30932	B12015	12	98.7	99.8	
RA33621	C10019	123	98.5	99.0	99.4
RA40321	C10032	123	97.3	96.1	97.4
RA40421	C10026	1	99.6		
RA43321	A22010	2		99.6	
RA45911	F30021	3			98.9
RA46642	C50032	3			94.8
RA47541	C20033	3			89.9
RA51032	B22001	123	97.6	97.4	95.5
RA60132	B12012	1	99.8		
RA70243	C10041	12	99.6	99.3	
RA80844	C30012	3			95.7
RA94644	C30011	3			95.3
RB22225	H11015	3			95.4
RB23425	H22005	3			92.1
RB24431	G20002	23		92.3	96.4
RB30625	G10003	23		98.1	97.6
RB31025	G44007	3			97.1
RB50423	K10015	12	97.0	95.9	
RB50723	H41017	3			91.9
RB50923	I21001	3			96.2
RB51023	I31001	3			95.9
RC50546	K10010	23		99.1	98.3
RD41321	K52001	1	99.1		
RD50632	K20040	123	99.0	99.8	99.0
RD90541	E12006	12	98.9	99.8	
RD90741	E14005	23		98.9	98.4

EXHIBIT 3 *(Continued)*. Average Percentage of Scorer Agreement for Readministered 1972-73 Open-Ended Mathematics Exercises

Release Number	NAEP Number	Age Overlap	Age 9 Avg. % Agreed	Age 13 Avg. % Agreed	Age 17 Avg. % Agreed
RD92342	K51019	12	98.7	98.3	
RD92542	C50014	23		98.4	98.9
RD93243	K50002	3			98.0
RD93643	K53003	3			96.2
RD95341	E11007	1	98.3		
RE12841	J12001	23		98.1	96.7
RE13043	J10009	3			98.9
RE13241	J11103	3			99.1
RE21441	J21009	23		99.0	99.8
RE40511	D20011	23		98.6	99.3
RE40911	D20005	1	98.8		

PART 2

AFFECTIVE AND MATHEMATICAL EXPERIENCE EXERCISES FROM THE 1977-78 MATHEMATICS ASSESSMENT
(APPENDIX A)

Attitudes and Values in Mathematics

Many mathematics educators consider positive attitudes toward mathematics to be an important education outcome. However, in most cases it is inappropriate to make statements about how people should feel or think. Therefore, the affective components of the assessment were designed to be primarily descriptive -- to find out what attitudes and values are held, and ultimately, to discover changes in attitudes over time.

The affective or attitudinal mathematics exercises are organized into four categories according to content. These categories are not to be construed as attitudinal scales. They are: mathematics in school, mathematics and oneself, mathematics and society, and mathematics as a discipline.

Mathematics in School

Attitudes toward the mathematics encountered in school are covered in the exercises in this category. They include a school subject comparison, a breakdown of classroom activities by frequency of occurrence, students' attitudes toward these activities, and a measure of the frequency of various mathematics content activities.

Mathematics and Oneself

This category assesses a respondent's perceptions of himself or herself in relationship to mathematics. Anxiety, motivation, self-concept and enjoyment of mathematics are the topics reflected in these exercises.

Mathematics and Society

This category includes measurement of the value of mathematics. The exercises assess perceptions or attitudes toward the usefulness and importance of mathematics to society and to the individual.

Mathematics as a Discipline

Here are respondents' views of mathematics as a cumulative or compartmentalized subject or as a fixed or changing subject, and of mathematics as a process, as well as other aspects of the nature of mathematics. There were no exercises in this category deemed appropriate for age 9 respondents, however.

Experiences in Mathematics

A set of questions was developed to measure students' experiences in mathematics-related activities. These exercises provide information about respondents' experiences with the metric system, electronic hand-held calculators, computers and, for 17-year-olds, about high school mathematics courses.

PART 3

COGNITIVE EXERCISES FROM THE 1977-78 MATHEMATICS ASSESSMENT[1] (APPENDIX B)

Early in the development of the materials for the 1977-78 mathematics assessment, a matrix for objectives was adopted. The matrix comprised mathematical process and mathematical content.

Mathematical Process

Mathematical Knowledge

The recall and recognition of mathematical ideas expressed in words, symbols or figures is the first subcategory in the mathematical process dimension. It relies, for the most part, on memory processes, and usually does not require more complex mental processes.

Mathematical Skill

Mathematical skill concerns the routine manipulation of mathematical ideas. It relies on the application of standard procedures or algorithms always leading to an answer. Mathematical skill requires the recollection of how to perform an algorithm.

Mathematical Understanding

The explanation and interpretation of mathematical knowledge compose mathematical understanding. Mathematical knowledge can be expressed in words, symbols or figures, while mathematical understanding relies primarily on the process of translating mathematical ideas within or between modes of expression. Mathematical understanding involves the memory process in addition to the processes of associating one item of knowledge with another.

---

[1] A more detailed treatment of the objectives and development process for the 1977-78 mathematics assessment is given in Mathematics Objectives, Second Assessment (see Bibliography). It also includes a summary of objectives from the first mathematics assessment.

Mathematical Application

Application refers to the use of mathematical knowledge, skill and understanding. It requires use of the memory, algorithmic, translation and judgment processes to solve problems.

Mathematical Content

The second dimension of the matrix divides the domain of mathematics into five content classifications, each addressed by specific exercises in the assessment. The content classifications are:

Numbers and Numeration

Whole numbers, integers, rational numbers expressed as common fractions or decimals, percents and real numbers compose numeration and numbers. A major emphasis is on operations with numbers. However, understanding of number concepts and properties and the use of numbers to solve problems are also assessed.

Variables and Relationships

Variables and relationships include algebraic facts, symbols, definitions, equations, inequalities, functions and formulas. In addition, exponents, coordinate systems and trigonometric functions are included in this category. Exercises that assess operations, understanding and problem solving are included in this classification.

Shape, Size and Position

School geometry objectives are stressed in this content classification, but the emphasis is not on geometry as a formal deductive system. NAEP used exercises concerning plane and solid figures, properties of some plane figures, basic theorems and relationships such as congruence and similarity, constructions, rotations and symmetry.

Measurement

Instrument reading, choice of appropriate units, measures of weight, capacity, time, temperature and length are included here. Also covered are concepts of area, volume and precision. Many exercises in this group use metric units or assess knowledge of the metric system of measurement.

Other Topics

This classification includes logic, statistics, probability, graphs and tables of data, electronic hand-held calculators, computers and attitudes.

* * * *

The matrix in Exhibit 4 shows the number of released exercises, both new and readministered, in each combination of taxonomic level and content category. Exercises have been assigned to only one process level and only one content classification. There may be some disagreement as to the proper classification of some of the exercises; perhaps several exercises could be properly located in more than one matrix cell. These drawbacks notwithstanding, it is hoped that the classifications will be of help to users of this booklet.

EXHIBIT 4. Number of Released Noncalculator Cognitive Exercises From the 1977-78 Mathematics Assessment by Process, Content Area and Age

	Mathematical Knowledge	Mathematical Skill	Mathematical Understanding	Mathematical Application
Numbers and Numeration				
9	7	12	11	10
13	3	18	25	17
17	1	18	19	18
Variables and Relationships				
9	1	5	2	0
13	0	8	7	2
17	1	16	9	5
Shape, Size and Position				
9	2	3	2	0
13	3	3	4	7
17	5	3	3	8
Measurement				
9	2	6	1	8
13	2	7	1	12
17	2	4	0	12
Other Topics				
9	1	2	0	5
13	1	2	0	12
17	1	2	1	14

Number of Released Calculator Cognitive Exercises From the 1977-78 Mathematics Assessment by Process, Content Area and Age

	Mathematical Knowledge	Mathematical Skill	Mathematical Understanding	Mathematical Application
Numbers and Numeration				
9	0	3	0	3
13	0	1	1	3
17	0	1	1	4
Variables and Relationships	There were no released calculator exercises which were classified in this content category.			
Shape, Size and Position	There were no released calculator exercises which were classified in this content category.			
Measurement	There were no released calculator exercises which were classified in this content category.			
Other Topics				
9	0	2	0	1
13	0	2	0	1
17	0	3	0	1

PART 4

RELEASED EXERCISES MEASURING CHANGE
(APPENDIX C)

As noted earlier, the 1977-78 mathematics assessment included exercises from the 1972-73 mathematics assessment. These exercises were included to measure any changes in performance from the earlier assessment. A two-dimensional content-by-mathematical-process matrix outline for the 1972-73 mathematics objectives is given in Exhibit 5. A detailed treatment of these objectives can be found in Mathematics Objectives (1970); a briefer statement is included in Mathematics Objectives, Second Assessment (1978).

The exercises measuring change have been reclassified into the 1977-78 content and process categories. These categories, as well as their 1972-73 objectives classifications, are shown in the documentation that accompanies the exercises.

EXHIBIT 5. 1972-73 Mathematics Cognitive Abilities by Content-Area Matrix, Cognitive Abilities and/or Objectives

Content Area	Recall or Recognize Facts, Definitions and Symbols	Perform Mathematical Manipulation	Understand Mathematical Concepts	Solicit Mathematical Problems	Use Mathematics and Mathematical Reasoning to Analyze and Define Problems, Form Hypotheses, Make Decisions and Verify Results	Appreciate and Use Mathematics
Number and Numeration Concepts						
Proportion of Numbers and Operations						
Arithmetic Computations						
Sets						
Estimation and Measurement						
Exponents and Logarithms						
Algebraic Expressions						
Equations and Inequalities						
Functions						
Probability and Statistics						
Geometry						
Trigonometry						
Mathematical Proof						
Logic						
Miscellaneous Topics						
Business and Consumer Mathematics						
Attitude and Interest						

PART 5

CROSS-REFERENCE TABLES

This section contains two sets of cross-reference tables. Exhibit 6 lists the released cognitive mathematics exercises by specific content classifications. Content classifications are included in the exercise documentation, but this is very general and items dealing with particular content can be difficult to locate. Exhibit 6 groups exercises into sets of items dealing with fairly specific content topics, such as place value; fractions; perimeter, area and volume; and so forth. This exhibit lists the release number and the NAEP number with age-group indicator appended, in release-number order. As explained in Part 1, 1 = 9-year-olds, 2 = 13-year-olds and 3 = 17-year-olds.

The second set of tables included in Exhibits 7 and 8 are for users of reports from the first mathematics assessment. For each released exercise measuring change in the 1977-78 assessment, Exhibits 7 and 8 list the NAEP number, the 1977-78 release number and the 1972-73 release number. The 1972-73 release numbers will begin with a U indicating that the exercises were unreleased in 1972-73. Exhibit 7 lists the exercises in 1977-78 release-number order; Exhibit 8 lists them in 1972-73 release-number order.

EXHIBIT 6. Released Cognitive Exercises by Specific Content in Release-Number Order

Release Number	NAEP Number	Release Number	NAEP Number
Place Value, Numeration, Odd-Even, Counting			
RA10211	A10211-12	RA22321	A22321-1
RA10331	A11003-1	RA23332	A23332-23
RA10521	A10521-1	RA25211	A25211-1
RA10832	A10832-1	RB32432	B32432-3
RA14331	A14331-123		
Order			
RA11346	A11346-2	RA53032	A53032-23
RA13332	A13332-23	RB10111	B11005-1
RA51032	B22001-123	RB20542	B20542-23
RA51511	A51511-12	RB32032	B32032-3
Properties of Operations and Relations			
RA30932	B12015-13	RA60421	A60421-123
RA45832	A45832-23	RB22625	B22625-23
RA60132	B12012-1	RB33332	B11008-123
Whole Numbers			
RA30221	C10009-123	RA40321	C10032-123
RA30321	A30321-123	RA40421	C10026-1
RA30421	C10006-12	RA41041	A41041-12
RA31141	A31141-12	RA44221	A44221-23
RA31241	A31241-1	RA47611	A47611-1
RA33621	C10019-123	RA48343	A48343-2
RA36711	A36711-1	RA80442	A80442-23
RA37211	A37211-1		
Fractions			
RA11932	A11932-23	RA31341	A31341-23
RA12021	A12021-23	RA31621	A31621-23
RA12311	A12311-2	RA31732	A31732-23
RA14721	A14721-23	RA31921	A31921-23
RA20232	A20232-23	RA41521	A41521-23
RA21032	K52029-12	RA42421	A42421-1
RA21332	K30006-12	RA47541	C20033-3
RA21341	C20006-123		

EXHIBIT 6 *(Continued)*. Released Cognitive Exercises by Specific Content in Release-Number Order

Release Number	NAEP Number	Release Number	NAEP Number
	Decimals		
RA32221	A32221-1	RA37432	A37432-23
RA32321	A32321-1	RA37532	A37532-23
RA33021	A33021-23		
	Percent		
RA13532	A23009-23	RA46721	A46721-23
RA13732	A13732-23	RA47244	A47244-23
RA20332	A20332-2	RA92944	A92944-3
RA20641	C50003-23	RA93944	A93944-3
RA46642	C50032-3		
	Integers		
RA33231	A33231-23	RA43221	A43221-23
RA36021	A36021-23	RA43321	A22010-2
RA36132	A36132-23		
	Geometric Figures		
RC10611	C10611-23	RC60324	C60324-23
RC10711	C10711-3	RC70124	C70124-123
RC11111	C11111-23	RC70424	C70424-123
RC11911	C11911-123	RC71324	C71324-1
RC12411	C12411-1	RC80642	C80642-23
RC50146	C50146-23	RC80843	C80843-23
RC50546	K10010-23	RC81042	C81042-23
RC50742	C50742-3	RC81343	C81343-3
	Scale Drawings		
RD92342	K51019-12		
RD94143	D94143-23		
	Perimeter, Area and Volume		
RD40222	D40222-12	RD90842	D90842-12
RD40322	D40322-12	RD91441	D91441-3
RD40922	D40922-23	RD93243	K50002-3
RD41321	K52001-1	RD93643	K53003-3
RD50532	D50532-12	RD93742	D93742-3
RD50632	K20040-123	RD948456	D94845-23

EXHIBIT 6 *(Continued)*. Released Cognitive Exercises by Specific Content in Release-Number Order

Release Number	NAEP Number	Release Number	NAEP Number
	Congruence, Similarity and Symmetry		
RC20532	C20532-23	RC30842	C30842-23
RC20643	C20643-23	RC90432	C90432-123
RC30232	C30232-12	RC90743	C90743-2
RC30411	C30411-23		
	Units of Measurement		
RA24911	A24911-1	RD90541	E12006-12
RA37044	A37044-1	RD90741	E14005-23
RD10811	E10003-123	RD91741	D91741-123
RD11611	D11611-123	RD91942	C91942-2
	Measurement		
RD20522	D20522-23	RD21522	D21522-12
RD20922	D20922-12	RD30222	D30222-12
RD21322	D21322-123	RD60232	D60232-123
	Estimation		
RA22445	A22445-1	RA45032	A45032-23
RA31532	A31532-23	RB22745	B22745-123
	Plotting Points in One and Two Dimensions		
RA13031	A13031-23	RB50423	K10015-12
RA21632	A21632-2	RB50623	B50623-12
RA23832	A23832-123		
	Equations and Inequalities		
RA50242	A50242-2	RB23325	B23325-3
RA51632	A51632-23	RB23425	H22005-3
RB20925	B20925-3	RB23532	B23532-12
RB21225	B21225-3	RB25042	B25042-3
RB21725	B21725-12	RB25242	B25242-3
RB22225	H11015-3	RB25525	B25525-3
RB22525	B22525-3	RB41732	B41732-3
RB22925	B22925-12		

EXHIBIT 6 *(Continued)*. Released Cognitive Exercises by Specific Content in Release-Number Order

Release Number	NAEP Number	Release Number	NAEP Number
Graphs of Equations and Inequalities			
RA52723	A52723-3	RB50923	I21001-3
RA23125	B23125-23	RB51023	I31001-3
RB50723	H41017-3		
Simplifying and Factoring Algebraic Expressions			
RB30625	G10003-23	RB31025	G44007-3
RB30725	B30725-3	RB32132	C50022-23
Formulas and Substitution			
RB40547	B40547-23		
RB41032	B41032-3		
RB41932	B41932-23		
Missing Information			
RA71043	A71043-23		
Exponent Facts			
RA45911	F30021-3		
RB10311	B10311-3		
Combinations			
RA70943	A70943-23	RE13043	J10009-3
RE10141	E10141-12	RE13241	J11003-3
Probability and Statistics			
RE11146	E11146-123	RE12841	J12001-23
RE11841	E11841-23	RE20541	E20541-23
RE12346	E12346-23	RE20644	E20644-2
RE12532	E12532-3	RE21441	J21009-23

EXHIBIT 6 *(Continued)*. Released Cognitive Exercises by Specific Content in Release-Number Order

Release Number	NAEP Number	Release Number	NAEP Number
Graphs and Tables of Data			
RA93544	A93544-3	RE30523	E30523-23
RA94744	A94744-3	RE31123	E31123-23
RE12944	J13001-3	RE32223	E32223-1
RE30123	E30123-1	RE32346	E32346-23
Translation			
RA30631	A30631-123	RB24731	B24731-23
RA42131	A48131-12	RB25431	B25431-2
RB24431	G20002-23		
Time Problems			
RD92442	D92442-3		
RD94043	D94043-3		
RD95341	E11007-1		
Cost Problems			
RA32544	A32544-123	RA80844	C30012-3
RA60942	A60942-123	RA94644	C30011-3
D=RT Problems			
RD92542	C50014-23		
RE20941	E20941-123		
Nonroutine Problems			
RA52543	A52543-3		
RA70243	C10041-12		
RA70643	A70643-123		
Logic			
RE50248	E50248-123		
RE50343	E50343-23		
RE50448	E50448-123		

EXHIBIT 6 *(Continued)*. Released Cognitive Exercises by Specific Content in Release-Number Order

Release Number	NAEP Number	Release Number	NAEP Number
	Computer Programming and Flow Charts		
RE80183	E80183-23		
RE80283	E80283-23		
	Trigonometry		
RB42742	B42742-3		
	Sets		
RE40511	D20011-23		
RE40911	D20005-1		
	Hand Calculator Exercises		
RA30321K	A30321K-1	RA92944K	A92944K-3
RA32221K	A32221K-1	RA93944K	A93944K-23
RA32544K	A32544K-123	RE70261K	E70261K-23
RA35941K	A35941K-1	RE70462K	E70462K-123
RA44221K	A44221K-1	RE70565K	E70565K-23
RA46721K	A46721K-23	RE71361K	E71361K-1
RA48343K	A48343K-23	RE71565K	E71565K-1
RA51032K	B22001K-23	RE71761K	E71761K-3
RA60942K	A60942K-1		

EXHIBIT 7. Released Exercises Measuring Change in 1977-78 Release-Number Order

1977-78 Release Number	1972-73 Release Number	NAEP Number
RA10331	UA01	A11003-1
RA13532	UA10	A23009-23
RA20641	UC19	C50003-23
RA21032	UA13	K52029-12
RA21232	UK11	K30006-12
RA21341	UC16	C20006-123
RA25211	UA07	A21029-1
RA30221	UC02	C10009-123
RA30421	UC01	C10006-12
RA30932	UB06	B12015-12
RA33621	UC04	C10019-123
RA40321	UC09	C10032-123
RA40421	UC06	C10026-1
RA43321	UC23	A22010-2
RA45911	UF05	F30021-3
RA46642	UC21	C50032-3
RA47541	UE20	C20033-3
RA51032	UB07	B22001-123
RA60132	UB05	B12012-1
RA70243	UN03	C10041-12
RA80844	UP08	C30012-3
RA94644	UP07	C30011-3
RB10111	UB02	B11005-1
RB22225	UH03	H11015-3
RB23425	UH07	H22005-3
RB24431	UG02	G20002-23
RB30625	UG01	G10003-23
RB31025	UG04	G44007-3
RB32132	UB10	C50022-23
RB33332	UB03	B11008-123*
RB50423	UK02	K10015-12
RB50723	UH09	H41017-3
RB50923	UI01	I21001-3
RB51023	UI03	I31001-3
RC50546	UK01	K10010-23
RD10811	UE01	E10003-123
RD41321	UK18	K52001-1
RD50632	UK07	K20040-123
RD90541	UE07	E12006-12
RD90741	UE13	E14005-23
RD92342	UK15	K51019-12
RD92542	UC20	C50014-23
RD93243	UK14	K50002-3
RD93643	UK20	K53003-3
RD95341	UE03	E11007-1
RE12841	UJ05	J12001-23
RE12944	UQ01	J13001-3
RE13043	UJ02	J10009-3
RE13241	UJ04	J11003-3
RE21441	UJ07	J21009-23
RE40511	UD04	D20011-23
RE40911	UD01	D20005-1

---

*This exercise was not given to age 9 respondents in 1972-73.

EXHIBIT 8. Released Exercises Measuring Change in 1972-73 Release-Number Order

1972-73 Release Number	1977-78 Release Number	NAEP Number
UA01	RA10331	A11003-1
UA07	RA25211	A21029-1
UA10	RA13532	A23009-23
UA13	RA21032	K52029-12
UB02	RB10111	B11005-1
UB03	RB33332	B11008-123*
UB05	RA60132	B12012-1
UB06	RA30932	B12015-12
UB07	RA51032	B22001-123
UB10	RB32132	C50022-23
UC01	RA30421	C10006-12
UC02	RA30221	C10009-123
UC04	RA33621	C10019-123
UC06	RA40421	C10026-1
UC09	RA40321	C10032-123
UC16	RA21341	C20006-123
UC19	RA20641	C50003-23
UC20	RD92542	C50014-23
UC21	RA46642	C50032-3
UC23	RA43321	A22010-2
UD01	RE40911	D20005-1
UD04	RE40511	D20011-23
UE01	RD10811	E10003-123
UE03	RD95341	E11007-1
UE07	RD90541	E12006-12
UE13	RD90741	E14005-23
UE20	RA47541	C20033-3
UF05	RA45911	F30021-3
UG01	RB30625	G10003-23
UG02	RB24431	G20002-23
UG04	RB31025	G44007-3
UH03	RB22225	H11015-3
UH07	RB23435	H22005-3
UH09	RB50723	H41017-3
UI01	RB50923	I21001-3
UI03	RB51023	I31001-3
UJ02	RE13043	J10009-3
UJ04	RE13241	J11003-3
UJ05	RE12841	J12001-23
UJ07	RE21441	J21009-23
UK01	RC50546	K10010-23
UK02	RB50423	K10015-12
UK07	RD50632	K20040-123
UK11	RA21232	K30006-12
UK14	RD93243	K50002-3
UK15	RD92342	K51019-12
UK18	RD41321	K52001-1
UK20	RD93643	K53003-3
UN03	RA70243	C10041-12
UP07	RA94644	C30011-3
UP08	RA80844	C30012-3
UQ01	RE12944	J13001-3

---

*This exercise was not given to age 9 respondents in 1972-73.

BIBLIOGRAPHY

Mathematics Objectives, 1972-73 Assessment. Ann Arbor, Mich.: National Assessment of Educational Progress, Education Commission of the States, 1970. Educational Resources Information Center (ERIC) no. ED 063 140. Available from National Assessment offices in Denver, Colo.

Mathematics Objectives, Second Assessment, 1977-78 Assessment. Denver, Colo.: National Assessment of Educational Progress, Education Commission of the States, 1978. ERIC no. ED 156 439.

APPENDIX A

AFFECTIVE AND EXPERIENTIAL EXERCISES FROM THE 1977-78 MATHEMATICS ASSESSMENT

Release #: 8D11711

NAEP #: S-D11711-919-23

1977-78 Content Area: D. Measurement
1977-78 Objective: Experiences with Mathematics

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

	13	17
Overlap: 1977-78 Package-Exercise:	09-41	09-39
Timing: (in seconds) Exercise Total Time	32	31

The data for the exercise is given in pairs of lines under each part. The data in the upper line offset to the left is for 13-year-olds and the data in the lower line offset to the right is for 17-year-olds.

How often have you used the metric system of measurement in each of the following?

No Response		Never	Seldom	Often	I don't know.
0.5	A. In mathematics classes	28.3	50.8	16.5	3.9
0.6		24.0	57.1	14.0	4.2
0.7	B. In science classes	28.9	30.5	35.1	4.8
0.7		17.7	29.1	48.3	4.3
0.8	C. In other classes in school	63.3	25.0	4.4	6.5
0.6		56.3	34.5	4.7	3.9
0.6	D. Outside of school	54.0	32.7	8.6	4.1
0.6		53.7	36.4	6.9	2.4

Release #: R260151

NAEP #: 5-R60151-919-2

1977-78 Content Area: X. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 13
1977-78 Package-Exercise: 01-01

Timing: (in seconds)
Exercise Total Time 134

Last year in your mathematics course how often did you

No Response		Often	Sometimes	Never
0.8	A. take mathematics tests?	61.1	37.1	1.0
1.2	B. do mathematics homework?	66.9	29.0	2.9
1.2	C. help a classmate do mathematics?	11.1	71.1	16.5
1.2	D. play mathematics games?	9.7	61.5	27.6
1.4	E. listen to the teacher explain a mathematics lesson?	81.0	16.0	1.7
1.4	F. watch the teacher work mathematics problems on the board?	76.1	20.8	1.6
1.4	G. get individual help from the teacher with your mathematics?	17.3	71.1	10.1

(Continued)

Last year in your mathematics course how often did you

No Response	Question	Often	Sometimes	Never
1.5	H. make reports or do projects on mathematics?	4.0	37.6	56.9
1.0	I. work ahead in your mathematics book?	12.4	42.5	44.1
1.2	J. do mathematics problems that were not assigned?	5.1	41.3	52.4
1.1	K. get help in mathematics from a classmate?	7.6	73.9	17.3
1.3	L. study mathematics topics that were not in the textbook?	8.3	45.8	44.6
1.2	M. discuss mathematics in class?	57.8	37.5	3.5

(Continued)

Last year in your mathematics course how often did you

No Response	Question	Often	Sometimes	Never
1.0	N. work mathematics problems at the board?	32.8	57.5	8.7
0.6	O. work mathematics problems in small groups?	8.7	46.8	43.9
0.6	P. work mathematics problems alone?	81.4	16.7	1.2
0.9	Q. do mathematics laboratory activities?	2.4	20.7	75.9
0.7	R. choose what mathematics you wanted to study?	3.3	22.1	73.9
0.6	S. use a mathematics textbook?	80.5	14.4	4.5

Release #: E260251

NAEP #: 5-E60251-919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

	13	17
Overlap: 1977-78 Package-Exercise:	02-01	02-01
Timing: (in seconds) Exercise Total Time	151	150

The data for the exercise is given in pairs of lines under each part. The data in the upper line offset to the left is for 13-year-olds and the data in the lower line offset to the right is for 17-year-olds.

How do you feel about each of these activities in learning mathematics? First, how much do you like or dislike them? Second, how useful are they in learning mathematics? For each line, fill in one oval that describes how you feel.

A. Getting individual help from the teacher on *your* mathematics

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
9.5	20.7	48.2	15.7	4.3	1.6
4.2	26.6	52.7	11.2	4.6	0.8

No Response	Very useful	Useful	Undecided	Not very useful	Useless
23.5	26.8	40.7	5.4	2.6	1.0
10.4	41.3	42.4	3.9	1.5	0.4

B. Getting help in mathematics from a classmate

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
7.9	16.0	38.7	19.5	13.9	4.0
3.1	17.3	51.9	16.8	8.0	0.8

No Response	Very useful	Useful	Undecided	Not very useful	Useless
28.2	10.5	33.4	14.3	10.3	3.3
13.8	17.1	47.6	13.2	7.5	0.9

C. Discussing mathematics in class

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
8.3	27.0	42.6	11.2	8.7	2.1
5.6	25.5	46.5	12.4	8.2	1.8

No Response	Very useful	Useful	Undecided	Not very useful	Useless
29.0	26.9	31.6	7.9	3.1	1.5
14.6	33.2	39.5	8.5	3.1	1.2

(Continued)

How do you feel about each of these activities in learning mathematics?

D. Working mathematics problems at the board

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
5.9 3.5	23.1 11.9	40.4 37.0	10.5 12.0	17.1 27.2	3.1 8.4

No Response	Very useful	Useful	Undecided	Not very useful	Useless
31.0 17.4	17.5 17.9	35.3 39.1	10.6 13.6	3.8 9.3	1.8 2.7

E. Working mathematics problems in small groups

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
7.3 4.7	18.1 16.5	42.5 46.5	15.7 17.8	14.0 13.0	2.4 1.4

No Response	Very useful	Useful	Undecided	Not very useful	Useless
30.1 15.8	13.1 15.3	31.9 40.2	14.1 17.5	8.3 9.9	2.4 1.2

F. Working mathematics problems alone

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
5.1 2.8	19.9 13.5	43.3 48.9	14.9 15.2	13.3 16.0	3.5 3.5

No Response	Very useful	Useful	Undecided	Not very useful	Useless
30.6 17.8	14.5 14.7	31.8 38.4	14.1 16.6	7.0 10.2	1.9 2.1

G. Doing mathematics laboratory activities

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
5.8 3.6	15.4 7.9	29.5 25.3	32.9 39.8	12.0 17.1	4.4 6.3

No Response	Very useful	Useful	Undecided	Not very useful	Useless
30.5 17.8	11.9 8.1	22.7 25.8	26.2 37.5	6.0 7.5	2.6 3.4

(Continued)

How do you feel about each of these activities in learning mathematics?

H. Using a mathematics textbook

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
5.3 3.4	15.0 13.5	47.2 50.8	10.8 13.0	17.2 16.1	4.4 3.1

No Response	Very useful	Useful	Undecided	Not very useful	Useless
29.3 15.4	16.3 19.9	36.8 45.9	9.3 11.4	6.6 6.1	1.7 1.3

I. Studying mathematics topics that aren't in the textbook

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
5.9 3.7	10.9 7.1	34.0 32.6	20.1 26.6	23.2 25.7	5.8 4.2

No Response	Very useful	Useful	Undecided	Not very useful	Useless
28.9 14.9	10.1 8.8	29.9 33.7	18.5 25.3	9.7 13.9	2.9 3.4

J. Making reports or doing projects on mathematics

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
5.0 2.7	10.7 3.9	21.3 16.1	14.8 18.6	33.2 40.2	15.1 18.5

No Response	Very useful	Useful	Undecided	Not very useful	Useless
29.7 16.0	9.2 4.3	21.2 20.9	17.7 24.4	14.1 24.1	8.0 10.4

Release #: RB60351

NAEP #: 5-R60351-919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	13 03-01	17 03-01
Timing: (in seconds) Exercise Total Time	114	113

The data for the exercise is given in pairs of lines under each part. The data in the upper line offset to the left is for 13-year-olds and the data in the lower line offset to the right is for 17-year-olds.

A. How much do you like or dislike each of these subjects?

No Response		Dislike it a lot	Dislike it a little	Undecided	Like it a little	Like it a lot	Never took it
0.5 0.5	Science	6.1 7.9	13.2 15.1	5.9 6.3	44.7 46.3	27.7 23.2	1.8 0.7
1.3 1.1	Social Studies	11.3 9.4	16.7 15.9	9.2 8.0	33.2 38.0	27.2 26.9	1.2 0.7
1.7 1.4	Mathematics	9.0 16.3	12.8 15.5	7.2 8.1	29.7 31.6	39.6 27.0	0.1 0.0
1.5 1.2	English	11.6 10.4	17.4 15.0	11.5 10.4	34.1 35.9	23.0 27.0	0.8 0.0
1.1 0.6	Physical Ed.	6.0 5.8	5.4 5.3	4.0 6.2	15.5 19.6	63.8 60.7	4.3 1.7

B. How easy or hard is each of these subjects?

No Response		Very Easy	Easy	Undecided	Hard	Very Hard	Never took it
1.8 0.8	Science	5.7 2.7	33.0 29.6	26.0 23.2	26.6 37.5	3.1 5.4	1.7 0.7
1.2 0.9	Social Studies	6.4 10.6	39.3 40.8	19.7 19.3	27.2 22.4	4.6 5.1	1.3 0.9
1.3 0.8	Mathematics	14.7 6.3	41.3 29.6	13.4 14.8	22.8 33.6	6.2 14.7	0.2 0.0
1.3 0.9	English	10.6 10.5	38.5 40.5	20.6 18.3	22.2 22.9	5.9 6.9	0.9 0.9
1.3 0.7	Physical Ed.	44.9 56.1	35.0 30.5	9.9 8.6	5.2 2.1	1.5 0.7	4.1 1.3

C. How important or unimportant is each of these subjects?

No Response		Unimportant	Not very important	Undecided	Important	Very important	Never took it
2.4 1.2	Science	3.3 3.7	10.7 13.3	9.9 12.3	48.2 44.2	23.9 24.9	1.4 0.3
2.3 1.2	Social Studies	3.4 4.0	11.8 17.0	11.6 13.9	45.9 45.1	34.1 18.0	0.9 0.7
2.3 1.1	Mathematics	2.0 1.8	1.9 3.9	3.7 5.1	28.5 36.8	61.5 51.3	0.2 0.0
2.3 1.0	English	2.9 1.9	4.5 4.0	7.8 5.5	33.5 33.6	48.8 54.0	0.8 0.0
2.2 1.2	Physical Ed.	6.6 9.3	21.1 22.1	11.0 12.0	33.5 34.8	21.4 19.3	3.8 1.3

Release #: RE60451

NAEP #: 5-E60451-919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	13	17
	04-01	08-01
Timing: (in seconds) Exercise Total Time	119	128

The data for the exercise is given in pairs of lines under each part. The data in the upper line offset to the left is for 13-year-olds and the data in the lower line offset to the right is for 17-year-olds.

How do you feel about each of these activities in learning mathematics? First, how much do you like or dislike them? Second, how useful are they in learning mathematics? For each activity, indicate your feeling by filling in one oval on each line.

A. Taking mathematics tests

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
4.9	10.0	39.1	24.6	17.4	4.0
1.6	3.9	31.4	24.8	29.3	9.0

No Response	Very useful	Useful	Undecided	Not very useful	Useless
16.2	28.0	44.3	7.9	2.4	1.2
5.7	19.5	55.0	13.4	4.7	1.7

B. Doing mathematics homework

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
4.2	7.7	34.7	15.8	29.6	7.9
1.4	4.5	27.8	17.3	36.6	12.5

No Response	Very useful	Useful	Undecided	Not very useful	Useless
21.9	18.8	41.5	11.8	4.5	1.3
11.6	20.5	47.0	11.6	6.9	2.3

C. Helping a classmate do mathematics

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
3.9	17.3	43.9	21.5	10.9	2.4
2.1	9.7	45.7	25.0	13.6	3.9

No Response	Very useful	Useful	Undecided	Not very useful	Useless
23.2	16.1	36.6	12.8	8.0	3.3
13.0	17.2	43.3	15.5	7.3	3.6

D. Playing mathematics games

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
4.2	37.3	40.5	9.7	6.2	2.0
2.5	15.7	41.2	17.2	17.8	5.5

No Response	Very useful	Useful	Undecided	Not very useful	Useless
24.1	20.2	38.2	10.4	4.8	2.2
12.6	14.9	42.2	15.8	9.4	5.0

(Continued)

How do you feel about each of these activities in learning mathematics?

E. Listening to the teacher explain a mathematics lesson

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
5.6 2.5	11.4 12.5	39.8 35.0	20.3 21.5	19.0 23.0	3.9 5.6

No Response	Very useful	Useful	Undecided	Not very useful	Useless
22.7 11.5	26.5 32.6	38.5 41.1	8.3 9.9	3.1 3.4	0.9 1.4

F. Watching the teacher work mathematics problems on the board

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
5.9 3.4	15.9 18.8	41.8 45.9	20.2 15.7	13.9 12.6	2.2 3.5

No Response	Very useful	Useful	Undecided	Not very useful	Useless
21.5 10.7	28.8 41.9	37.7 37.5	8.0 5.6	2.9 3.0	1.1 1.2

G. Using hand calculators in mathematics

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
4.7 2.3	41.1 34.7	28.9 36.6	10.2 14.9	10.9 8.6	4.2 2.8

No Response	Very useful	Useful	Undecided	Not very useful	Useless
21.1 11.1	22.3 30.2	20.8 30.2	10.0 13.1	17.7 10.3	8.1 5.0

H. Using a computer in mathematics

No Response	Like a lot	Like	Undecided	Dislike	Dislike a lot
6.1 2.8	27.5 19.5	26.0 22.9	26.9 44.9	10.0 7.0	3.4 2.8

No Response	Very useful	Useful	Undecided	Not very useful	Useless
20.2 10.8	18.5 19.4	20.2 23.3	22.6 35.4	11.8 6.8	6.6 4.2

Release #: R60551

NAEP #: 5-R60551-919-23

1977-78 Content Area: R. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:

	13	17
1977-78 Package-Exercise:	10-02	10-02
Timing: (in seconds)		
Exercise Total Time	109	155

The data for the exercise is given in pairs of lines under each part. The data in the upper line offset to the left is for 13-year-olds and the data in the lower line offset to the right is for 17-year-olds.

This exercise asks how you feel about computers. There are no correct answers. The answer choices are "Strongly Disagree," "Disagree," "Undecided," "Agree," or "Strongly Agree." For each part, choose the one response that BEST describes how you feel about the statement. Be sure to fill in one oval in each box.

A. Computers dehumanize society by treating everyone as a number.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.2	9.0	22.0	37.0	25.6	6.2
0.3	5.0	25.7	28.2	33.7	7.2

B. The more computers are used, the less privacy a person will have.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.5	9.6	32.3	22.4	25.7	9.5
0.3	5.7	34.2	24.4	29.2	6.0

C. Computers will probably create as many jobs as they eliminate.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.6	6.1	18.2	22.5	41.7	11.0
0.4	5.5	26.0	20.1	41.6	6.4

D. Computers slow down and complicate simple business operations.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.7	20.7	35.5	19.8	18.4	5.0
0.3	23.7	46.4	16.8	10.3	2.3

E. Someday most things will be run by computers.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.3	3.4	6.1	14.5	48.6	27.1
0.3	1.9	6.8	12.1	57.5	21.5

F. A knowledge of computers will help a person get a better job.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.2	5.7	13.5	22.7	42.4	15.5
0.3	2.2	11.1	21.9	48.8	15.7

G. Computers can help make mathematics more interesting.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.3	5.7	11.9	19.0	42.7	20.3
0.3	3.5	10.3	26.8	48.2	10.9

(Continued)

How do you feel about each of these statements?

H. Computers are suited for doing repetitive, monotonous tasks.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.8	2.4	11.3	46.6	32.5	6.3
0.6	1.0	10.3	25.2	51.6	11.4

I. Computers are programmed to follow precise, specific instructions.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.3	1.1	4.0	9.5	61.9	23.2
0.4	0.6	1.6	5.7	68.2	23.4

J. Computers require special languages for people to communicate with them.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.2	5.0	19.3	24.3	40.6	10.5
0.4	2.2	15.5	21.2	47.5	13.2

K. Computers have a mind of their own.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.3	22.8	33.2	14.3	21.0	8.5
0.2	28.3	38.6	15.2	13.9	3.7

L. Computers make mistakes much of the time.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.1	17.3	42.3	17.6	16.8	5.9
0.3	15.3	46.6	21.7	13.6	2.5

M. To work with a computer, a person must be a mathematician.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.2	21.1	42.0	18.6	12.8	5.3
0.2	15.6	53.4	16.0	12.2	2.5

N. Computers store instructions and information.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.2	0.9	3.5	10.3	58.1	26.9
0.2	0.4	1.7	6.2	60.9	30.5

Release #: ME60651

NAEP #: 5-M60651-919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	10-03	10-03
Timing: (in seconds)		
Exercise Total Time	61	57

The data for the exercise is given in pairs of lines under each part. The data in the upper line offset to the left is for 13-year-olds and the data in the lower line offset to the right is for 17-year-olds.

How much would a computer help in accomplishing each of the following activities? Be sure to fill in one oval in each box.

No Response		Computer helps a lot	Helps a little	Does not help
0.2 0.3	A. Calculating and printing bills for a credit card company	72.2 84.2	24.3 14.1	3.3 1.4
0.3 0.2	B. Keeping track of a car maker's inventory	47.9 60.3	41.6 34.7	10.1 4.8
0.1 0.1	C. Telling which food tastes best	3.4 0.9	6.0 5.8	90.4 93.2
0.2 0.2	D. Predicting election results	40.7 42.9	35.0 41.5	24.0 15.5
0.2 0.2	E. Alphabetizing lists of names	65.3 79.3	27.0 15.8	7.4 4.7
0.2 0.1	F. Writing a novel	6.8 2.3	18.2 10.6	74.8 86.9
0.3 0.2	G. Diagnosing diseases	25.2 23.7	32.9 42.6	41.6 33.4

Release #: RM60751

NAEP #: S-M60751-919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	13	17
	05-01	05-01
Timing: (in seconds) Exercise Total Time	123	119

The data for the exercise is given in pairs of lines under each part. The data in the upper line offset to the left is for 13-year-olds and the data in the lower line offset to the right is for 17-year-olds.

How do you feel about each of these mathematics activities? First, how important are they? Second, how easy are they? Third, how much do you like them? For each activity, indicate your feeling by filling in one oval on each line.

A. Solving word problems

No Response	Very important	Important	Undecided	Not very important	Not important at all
4.9	23.3	50.2	13.3	7.2	1.0
1.8	15.2	53.4	16.8	11.2	1.5

No Response	Very easy	Easy	Undecided	Hard	Very hard
7.8	7.9	49.2	21.3	12.8	1.0
3.3	3.1	34.3	28.3	29.2	1.8

No Response	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
8.8	7.7	40.8	19.8	18.9	4.0
2.9	2.8	29.5	24.9	32.3	7.7

B. Working with fractions

No Response	Very important	Important	Undecided	Not very important	Not important at all
6.9	27.5	50.6	9.4	4.9	0.7
2.2	25.6	55.4	10.4	5.4	1.0

No Response	Very easy	Easy	Undecided	Hard	Very hard
11.0	8.0	43.9	16.6	18.8	1.6
3.9	10.7	47.2	18.0	18.5	1.6

No Response	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
14.3	8.7	37.7	17.9	18.1	3.4
5.2	5.0	40.6	22.6	22.7	3.9

C. Estimating answers to problems

No Response	Very important	Important	Undecided	Not very important	Not important at all
8.6	17.3	45.7	17.7	9.7	0.9
3.1	14.2	52.2	19.7	9.8	1.0

No Response	Very easy	Easy	Undecided	Hard	Very hard
13.1	9.0	41.4	22.5	13.1	0.9
5.7	6.0	41.8	29.3	15.6	1.6

No Response	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
14.8	6.2	38.1	22.1	17.3	1.5
6.1	3.7	32.9	35.0	19.6	2.7

(Continued)

How do you feel about each of these mathematics activities?

D. Measuring lengths, weights or volumes

No Response	Very important	Important	Undecided	Not very important	Not important at all
6.4	28.8	46.5	12.1	5.1	1.2
1.8	30.1	52.4	9.3	5.3	1.1
	Very easy	Easy	Undecided	Hard	Very hard
11.7	6.6	37.9	19.9	21.7	2.2
4.3	8.7	41.1	20.5	23.2	2.2
	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
14.5	5.8	34.5	21.6	20.8	2.8
5.5	4.1	36.2	26.5	24.9	2.8

E. Working with metric measures

	Very important	Important	Undecided	Not very important	Not important at all
7.7	35.6	37.0	11.0	6.5	2.2
2.8	35.3	37.4	13.2	8.2	3.1
	Very easy	Easy	Undecided	Hard	Very hard
11.7	7.5	26.8	20.0	28.7	5.3
4.5	7.2	23.7	21.5	35.3	7.8
	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
14.9	7.5	28.3	19.7	23.5	6.0
5.1	4.9	23.0	26.0	30.9	10.1

F. Doing proofs

	Very important	Important	Undecided	Not very important	Not important at all
9.2	11.5	36.9	34.8	6.0	1.6
2.8	8.9	34.1	28.5	18.7	6.9
	Very easy	Easy	Undecided	Hard	Very hard
13.6	3.1	25.5	40.3	15.7	1.8
4.6	2.8	20.3	32.8	30.3	9.2
	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
15.0	3.6	22.4	39.8	15.7	3.4
4.8	4.0	15.4	34.7	27.9	13.2

Release #: R260051

NAEP #: 5-R60051-919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	13 06-01	17 06-01
Timing: (in seconds) Exercise Total Time	123	122

The data for the exercise is given in pairs of lines under each part. The data in the upper line offset to the left is for 13-year-olds and the data in the lower line offset to the right is for 17-year-olds.

How do you feel about each of these mathematics activities? First, how important are they? Second, how easy are they? Third, how much do you like them? For each activity, indicate your feeling by filling in one oval on each line.

A. Solving equations

No Response	Very important	Important	Undecided	Not very important	Not important at all
2.1	31.1	51.0	11.3	3.8	0.7
1.7	25.3	54.8	12.9	4.7	0.6

No Response	Very easy	Easy	Undecided	Hard	Very hard
6.0	12.2	47.0	22.4	11.4	1.0
3.5	9.0	44.7	26.9	15.4	0.5

No Response	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
5.5	8.6	47.0	21.8	14.7	2.4
3.8	5.3	40.8	27.6	19.1	3.4

B. Working with percentages

No Response	Very important	Important	Undecided	Not very important	Not important at all
4.4	26.9	49.6	13.7	4.5	0.8
2.9	25.5	54.0	12.4	4.8	0.4

No Response	Very easy	Easy	Undecided	Hard	Very hard
9.4	6.5	38.6	24.1	19.7	1.7
5.5	5.8	41.2	22.2	24.2	1.1

No Response	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
11.9	5.3	36.7	24.5	19.1	2.4
7.1	3.0	31.4	28.7	26.8	3.1

C. Memorizing rules and formulas

No Response	Very important	Important	Undecided	Not very important	Not important at all
6.0	25.5	43.7	16.3	6.9	1.5
4.3	18.1	39.2	20.8	15.0	2.6

No Response	Very easy	Easy	Undecided	Hard	Very hard
11.1	4.7	28.9	25.9	26.2	3.1
6.8	3.4	24.2	27.3	33.9	4.4

No Response	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
12.6	3.9	27.1	28.6	23.6	4.3
8.1	1.6	18.0	27.5	36.5	8.2

(Continued)

How do you feel about each of these mathematics activities?

8th

D. Using charts and graphs

No Response	Very important	Important	Undecided	Not very important	Not important at all
4.7 3.5	22.7 15.9	51.2 55.1	14.3 15.1	6.3 9.7	0.7 0.6

No Response	Very easy	Easy	Undecided	Hard	Very hard
9.4 7.6	12.8 11.5	47.7 51.2	15.9 18.0	13 10.9	1.0 0.8

No Response	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
11.6 8.5	11.1 7.5	43.5 44.8	19.3 21.6	12.6 15.9	1.8 1.8

E. Working with whole numbers

No Response	Very important	Important	Undecided	Not very important	Not important at all
5.3 4.2	28.9 33.8	48.9 49.6	10.6 8.4	5.6 3.8	0.7 0.2

No Response	Very easy	Easy	Undecided	Hard	Very hard
8.1 6.3	26.3 29.3	48.8 51.1	10.3 9.2	5.7 4.0	0.7 0.2

No Response	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
11.8 7.4	15.6 14.5	48.4 51.2	16.9 18.8	7.3 7.5	0.9 0.6

F. Doing long division

No Response	Very important	Important	Undecided	Not very important	Not important at all
6.1 5.0	24.1 18.6	46.3 50.7	13.4 12.7	8.5 12.1	1.6 0.9

No Response	Very easy	Easy	Undecided	Hard	Very hard
7.9 5.9	10.1 15.6	39.7 47.5	17.0 17.7	22.0 12.2	3.3 1.0

No Response	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
9.4 6.9	7.8 7.0	31.8 33.4	18.8 23.3	24.8 25.6	7.4 3.8

Release #: RE60951

NAEP #: S-R60951-919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	13 07-01	17 07-01
Timing: (in seconds) Exercise Total Time	112	108

The data for the exercise is given in pairs of lines under each part. The data in the upper line offset to the left is for 13-year-olds and the data in the lower line offset to the right is for 17-year-olds.

How do you feel about each of these mathematics activities? First, how important are they? Second, how easy are they? Third, how much do you like them? For each activity, indicate your feeling by filling in one oval on each line.

A. Working with decimals

No Response	Very important	Important	Undecided	Not very important	Not important at all
1.8	33.1	53.2	8.3	3.3	0.3
1.5	28.7	56.6	8.3	4.5	0.4

No Response	Very easy	Easy	Undecided	Hard	Very hard
4.8	12.9	49.2	17.8	14.0	1.3
3.0	18.5	52.9	15.8	9.4	0.5

No Response	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
4.6	8.0	51.2	19.9	13.1	3.3
3.3	4.2	46.1	28.4	15.5	2.4

B. Estimating measurements (lengths, weights, areas, etc.)

No Response	Very important	Important	Undecided	Not very important	Not important at all
5.0	34.3	45.2	9.7	5.5	0.3
2.8	31.9	53.0	8.7	3.1	0.4

No Response	Very easy	Easy	Undecided	Hard	Very hard
11.1	7.0	42.8	19.6	18.0	1.4
5.5	4.6	44.6	25.3	19.4	0.6

No Response	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
12.4	5.0	38.1	21.9	20.4	2.3
6.5	2.9	35.0	31.3	22.9	1.5

(Continued)

How do you feel about each of the: · mathematics activities?

C. Learning about geometric figures

No Response	Very important	Important	Undecided	Not very important	Not important at all
6.9	16.9	46.4	20.6	7.8	1.3
3.6	12.6	43.2	22.9	16.0	1.7

No Response	Very easy	Easy	Undecided	Hard	Very hard
13.5	4.6	27.8	26.2	25.4	2.4
6.8	5.9	28.7	24.5	30.6	3.6

No Response	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
16.0	4.1	28.8	27.4	20.4	3.1
8.5	4.9	24.5	28.4	29.0	4.8

D. Checking the answer to a problem by going back over it

No Response	Very important	Important	Undecided	Not very important	Not important at all
6.1	39.4	41.8	6.7	5.0	0.9
2.9	43.6	45.5	5.3	2.5	0.2

No Response	Very easy	Easy	Undecided	Hard	Very hard
13.5	18.7	49.3	12.7	5.3	0.4
5.8	19.9	55.6	12.9	5.5	0.3

No Response	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
15.5	8.1	32.2	21.1	20.2	2.9
7.5	5.7	37.0	26.5	20.6	2.7

E. Programming a computer

No Response	Very important	Important	Undecided	Not very important	Not important at all
8.1	31.8	31.4	20.3	6.7	1.7
3.1	26.9	33.3	26.4	8.7	1.6

No Response	Very easy	Easy	Undecided	Hard	Very hard
13.2	3.0	16.1	33.3	25.1	9.4
6.1	2.5	12.9	46.2	24.0	8.4

No Response	Like it a lot	Like it	Undecided	Dislike it	Dislike it a lot
14.8	7.4	22.9	41.5	10.7	2.6
7.0	6.7	18.1	54.1	11.3	2.8

Release #: BE61351

NAEP #: S-B61051-919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	13 08-01	17 08-01
Timing: (in seconds) Exercise Total Time	193	193

The data for the exercise is given in pairs of lines under each part. The data in the upper line offset to the left is for 13-year-olds and the data in the lower line offset to the right is for 17-year-olds.

This exercise asks how you feel about mathematics or mathematics activities. There are no correct answers. The answer choices are "Strongly Disagree," "Disagree," "Undecided," "Agree," or "Strongly Agree." For each part, choose the one response that best describes how you feel about the statement. Be sure to fill in one oval in each box.

A. I am willing to work hard to do well in mathematics.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.1	0.8	2.1	6.8	55.1	35.0
1.5	0.8	4.4	16.2	57.9	19.2

B. Mathematics is more for girls than for boys.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.4	51.9	32.9	9.8	4.0	1.1
1.1	52.0	36.6	7.8	1.5	1.0

C. Learning mathematics is mostly memorizing.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.9	7.2	25.9	18.0	39.6	8.4
1.3	6.7	33.0	14.3	39.8	4.8

D. Mathematics is useful in solving everyday problems.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.8	2.4	9.2	8.6	53.1	25.8
1.2	1.4	10.0	10.2	54.6	22.4

E. Exploring number patterns plays almost no part in mathematics.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1.3	19.5	44.6	21.5	10.8	2.3
1.2	17.6	50.7	22.7	6.7	1.1

(Continued)

How do you feel about each of these statements?

F. I enjoy mathematics.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.8	5.0	12.7	13.9	49.2	18.3
0.5	7.8	22.0	16.9	41.7	11.0

G. There is always a rule to follow in solving mathematics problems.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.7	1.0	4.4	5.0	62.3	26.6
0.5	0.8	7.3	3.7	63.6	24.0

H. Most of mathematics has practical use.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.4	1.3	5.1	13.0	64.0	16.2
0.5	0.8	9.1	10.4	65.4	13.8

I. Knowing how to solve a problem is as important as getting a solution.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.3	1.0	3.1	8.0	55.0	32.5
0.5	0.4	2.4	4.4	54.6	37.7

J. Doing mathematics requires lots of practice in following rules.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.3	1.4	10.2	11.2	54.3	22.6
0.5	0.4	7.4	11.5	62.0	18.2

K. I can get along well in everyday life without using mathematics.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.3	39.0	45.1	9.2	4.8	1.6
0.3	26.7	50.0	13.4	8.0	1.6

L. Mathematicians work with symbols rather than ideas.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.3	4.7	18.9	44.2	26.9	5.0
0.4	5.4	29.1	36.9	26.3	2.0

(Continued)

How do you feel about each of these statements?

M. Fewer men than women have the logical ability to become mathematicians.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.5	18.6	38.2	26.8	13.5	2.5
0.4	27.4	45.2	19.9	6.4	0.7

N. Knowing why an answer is correct is as important as getting the correct answer.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.4	0.7	3.6	7.3	60.8	27.2
0.3	0.5	2.2	3.9	59.0	34.0

O. Mathematics is made up of unrelated topics.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.4	8.9	40.5	32.5	15.5	2.2
0.5	11.8	47.0	28.7	10.8	1.3

P. I really want to do well in mathematics.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.3	0.7	0.7	2.9	40.2	55.2
0.4	0.9	3.5	11.2	56.2	27.9

Q. My parents really want me to do well in mathematics.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.3	1.0	0.3	3.0	30.6	64.8
0.2	0.6	2.3	9.9	51.0	36.0

R. I feel good when I solve a mathematics problem by myself.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.4	0.9	2.2	6.4	49.1	40.9
0.2	0.9	1.7	7.0	49.9	40.2

Release #: RE61151

NAEP #: 5-E61151-919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	13 09-01	17 09-01
Timing: (in seconds) Exercise Total Time	165	157

The data for the exercise is given in pairs of lines under each part. The data in the upper line offset to the left is for 13-year-olds and the data in the lower line offset to the right is for 17-year-olds.

This exercise asks how you feel about mathematics or mathematics activities. There are no correct answers. The answer choices are "Strongly Disagree," "Disagree," "Undecided," "Agree," or "Strongly Agree." For each part, choose the one response that best describes how you feel about the statement. Be sure to fill in one oval in each box.

A. I am good at mathematics.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.1	1.3	7.8	26.2	51.5	13.0
0.2	3.5	18.5	23.6	46.1	8.0

B. Mathematics helps a person to think logically.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.8	1.0	5.4	19.9	55.3	17.6
0.4	1.1	6.8	15.7	59.3	16.6

C. It is important to know mathematics such as algebra or geometry in order to get a good job.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.5	1.5	11.9	14.3	44.0	27.8
0.3	4.7	28.2	20.8	34.3	11.6

D. It is important to know arithmetic in order to get a good job.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.6	0.9	4.5	7.0	46.8	40.2
0.3	1.1	5.8	6.2	50.8	35.6

(Continued)

How do you feel about each of these statements?

E. I am taking mathematics only because I have to.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.5	18.6	39.7	12.5	22.5	6.2
0.4	18.1	44.4	10.7	22.1	4.2

F. New discoveries are seldom made in mathematics.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1.1	11.9	29.2	22.4	29.7	5.6
0.5	12.5	40.6	28.4	15.4	2.6

G. Mathematics is more for boys than for girls.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.2	56.8	35.4	5.1	1.8	0.6
0.2	54.3	36.3	7.0	1.5	0.7

H. I would like to take more mathematics.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.2	8.5	16.1	25.8	35.0	14.3
0.2	12.6	19.7	29.0	27.5	10.9

I. Creative people usually have trouble with mathematics.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.1	13.7	37.4	33.4	12.5	2.8
0.1	15.3	40.7	33.8	8.0	2.0

(Continued)

How do you feel about each of these statements?

J. Estimating is an important mathematical skill.

No Response	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1.0	1.2	6.9	19.8	59.6	11.4
0.4	1.7	8.1	16.5	64.7	8.4

K. I usually understand what we are talking about in mathematics.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.2	1.3	9.1	10.9	65.6	12.9
0.2	2.9	16.8	13.6	58.8	7.7

L. Trial and error can often be used to solve a mathematics problem.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.4	2.9	10.3	30.8	45.8	9.7
0.3	1.3	8.8	19.2	59.3	11.1

M. A good grade in mathematics is important to me.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.2	0.7	0.9	1.6	39.2	57.4
0.2	1.4	5.8	8.3	49.5	34.7

N. Justifying the mathematical statements a person makes is an extremely important part of mathematics.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
0.2	0.8	3.3	30.9	52.5	12.2
0.3	0.9	3.7	27.5	53.2	14.4

Release #: RE61251

NAEP #: 5-E61251-919-1

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 05-02

Timing: (in seconds)
Exercise Total Time 102

How do you feel about each of these statements about mathematics? Do you disagree or agree? Fill in one oval for each statement. If you neither agree nor disagree, fill in the middle oval under "Undecided."

No Response		Disagree	Undecided	Agree
0.4	A. Mathematics is more for boys than for girls.	65.5	18.6	15.5
0.9	B. It is important to know some mathematics in order to get a good job.	7.2	8.1	83.7
0.8	C. I can get along well in everyday life without using mathematics.	70.9	16.6	11.8
0.7	D. I would like to work at a job that lets me use mathematics.	21.6	34.0	43.7
0.8	E. Mathematics is useful in solving problems in everyday life.	15.9	17.7	65.7
0.3	F. Most people do not use mathematics in their jobs.	38.8	26.2	34.7
0.2	G. Mathematics is more for girls than for boys.	65.5	20.8	13.4

Release #: EE61351

NAEP #: 5-E61351-919-1

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 03-02

Timing: (in seconds)
Exercise Total Time 79

How do you feel about each of these statements about mathematics? Are they true about you, sometimes true about you, or not true about you? Fill in one oval for each statement.

No Response	Statement	True about me	Sometimes true about me	Not true about me
0.3	**A.** I usually understand what we are talking about in mathematics.	38.9	56.6	4.2
0.6	**B.** I am good at working with numbers.	55.0	40.1	4.3
1.0	**C.** Doing mathematics makes me nervous.	21.1	29.6	48.2
0.5	**D.** Mathematics is boring for me.	16.7	30.9	51.9
0.4	**E.** I am willing to work hard to do well in mathematics.	78.7	18.2	2.6

Release #: RB61451

NAEP #: 5-B61451-919-1

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 01-01

Timing: (in seconds)
Exercise Total Time 169

How do you feel about these activities in learning mathematics? First, are they easy for you or are they hard for you? Second, do you like to do them, or don't you like to do them? Finally, are they important, or not important? Fill in one oval on each line that describes your feelings about each activity. If you feel the activity is between the two choices, fill in the oval marked "In between."

No Response			
	A. Learning about money		
	Easy	In between	Hard
0.6	52.2	38.5	8.6
	Like	In between	Do not like
2.4	67.8	22.4	7.4
	Important	In between	Not important
2.3	83.4	11.4	2.9
	B. Doing addition problems		
	Easy	In between	Hard
1.4	65.0	24.4	9.2
	Like	In between	Do not like
2.1	64.9	23.3	9.7
	Important	In between	Not important
2.0	77.5	16.8	3.7

(Continued)

No Response			
	C. Solving mathematics word problems		
	Easy	In between	Hard
0.6	30.8	50.9	17.7
	Like	In between	Do not like
1.8	45.0	35.3	17.9
	Important	In between	Not important
1.4	72.7	21.4	4.4
	D. Learning multiplication or times tables		
	Easy	In between	Hard
0.8	39.1	36.9	23.3
	Like	In between	Do not like
1.4	55.7	28.8	14.1
	Important	In between	Not important
1.4	81.9	13.8	2.8
	E. Learning how to measure things with a ruler		
	Easy	In between	Hard
1.0	61.4	28.2	9.4
	Like	In between	Do not like
1.2	59.0	28.7	11.0
	Important	In between	Not important
1.3	71.8	22.2	4.7

Release #: RE61551

NAEP #: 3-E61551-919-1

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 03-01

Timing: (in seconds)
Exercise Total Time 200

How do you feel about these activities in learning mathematics? First, do you like them a lot, like them a little, or not like them at all? Second, how much do they help you in learning mathematics? Do they help you a lot, help you a little, or not help you at all? For each activity, fill in one oval on each line that describes how you feel.

No Response			
	A. Taking mathematics tests		
0.9	I like it a lot. 45.6	I like it a little. 45.3	I do not like it. 8.2
4.9	It helps me a lot. 73.6	It helps me a little. 19.4	It does not help me. 2.1
	B. Doing mathematics homework		
2.2	I like it a lot. 32.2	I like it a little. 45.4	I do not like it. 20.2
4.2	It helps me a lot. 61.6	It helps me a little. 30.4	It does not help me. 3.8
	C. Helping a classmate do mathematics		
2.5	I like it a lot. 55.6	I like it a little. 31.3	I do not like it. 10.6
5.0	It helps me a lot. 39.0	It helps me a little. 34.0	It does not help me. 22.0
	D. Playing mathematics games		
2.0	I like it a lot. 76.7	I like it a little. 17.8	I do not like it. 3.5
4.1	It helps me a lot. 62.9	It helps me a little. 29.0	It does not help me. 3.9

(Continued)

How do you feel about these activities in learning mathematics?

No Response			
	E. Listening to the teacher explain a mathematics lesson		
1.3	I like it a lot. 49.5	I like it a little. 39.8	I do not like it. 9.3
2.5	It helps me a lot. 76.9	It helps me a little. 18.4	It does not help me. 2.2
	F. Watching the teacher work mathematics problems on the board		
1.9	I like it a lot. 54.8	I like it a little. 35.6	I do not like it. 7.7
3.4	It helps me a lot. 67.0	It helps me a little. 26.7	It does not help me. 2.9
	G. Getting individual help from the teacher on your mathematics		
1.4	I like it a lot. 60.5	I like it a little. 30.7	I do not like it. 7.3
3.4	It helps me a lot. 67.9	It helps me a little. 24.9	It does not help me. 3.7
	H. Getting help from a classmate on mathematics		
1.6	I like it a lot. 39.7	I like it a little. 37.7	I do not like it. 20.9
3.1	It helps me a lot. 38.0	It helps me a little. 42.8	It does not help me. 16.1
	I. Discussing mathematics in class		
1.5	I like it a lot. 51.7	I like it a little. 36.6	I do not like it. 10.1
2.9	It helps me a lot. 61.6	It helps me a little. 30.9	It does not help me. 4.6

Release #: RM61651

NAEP #: 5-RM61651-919-1

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 04-01

Timing: (in seconds)
Exercise Total Time 227

How do you feel about these activities in learning mathematics? First, do you like them a lot, like them a little, or not like them at all? Second, how much do they help you in learning mathematics? Do they help you a lot, help you a little, or not help you at all? For each activity, fill in one oval on each line that describes how you feel.

No Response			
	A. Working mathematics problems in small groups		
0.7	I like it a lot. 53.2	I like it a little. 41.4	I do not like it. 4.7
2.7	It helps me a lot. 67.9	It helps me a little. 26.5	It does not help me. 2.9
	B. Working mathematics problems alone		
1.6	I like it a lot. 49.8	I like it a little. 37.7	I do not like it. 10.6
3.3	It helps me a lot. 58.6	It helps me a little. 32.0	It does not help me. 6.1
	C. Using your mathematics book		
1.5	I like it a lot. 54.0	I like it a little. 35.9	I do not like it. 8.6
3.8	It helps me a lot. 66.1	It helps me a little. 26.6	It does not help me. 3.5
	D. Doing work sheets		
1.7	I like it a lot. 51.4	I like it a little. 37.4	I do not like it. 9.4
2.7	It helps me a lot. 60.3	It helps me a little. 33.5	It does not help me. 3.5

(Continued)

How do you feel about these activities in learning mathematics?

No Response			
	E. Doing mathematics laboratory activities		
	I like it a lot.	I like it a little.	I do not like it.
0.8	41.0	46.9	11.2
	It helps me a lot.	It helps me a little.	It does not help me.
2.6	47.4	44.6	5.4
	F. Using counters, rods, blocks, popsicle sticks or other objects		
	I like it a lot.	I like it a little.	I do not like it.
1.3	51.1	39.7	17.9
	It helps me a lot.	It helps me a little.	It does not help me.
1.9	42.9	41.3	13.9
	G. Using a scale to weigh objects in school		
	I like it a lot.	I like it a little.	I do not like it.
1.1	56.1	35.4	7.5
	It helps me a lot.	It helps me a little.	It does not help me.
2.0	49.1	41.4	7.5
	H. Using a ruler or meter stick to measure things		
	I like it a lot.	I like it a little.	I do not like it.
1.0	59.7	31.9	7.4
	It helps me a lot.	It helps me a little.	It does not help me.
1.9	63.7	29.7	4.6
	I. Working mathematics problems at the board		
	I like it a lot.	I like it a little.	I do not like it.
0.8	60.9	27.9	10.3
	It helps me a lot.	It helps me a little.	It does not help me.
1.9	63.4	30.1	4.6

Release #: A261751

NAEP #: 5-261751-919-1

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 05-01

Timing: (in seconds)
Exercise Total Time 129

How do you feel about these subjects in school? First, do you like them or do you not like them? Second, are they easy for you or are they hard for you? If you neither like nor dislike the subject or find it neither easy nor hard fill in the oval marked "In between." For each activity, fill in one oval on each line that describes how you feel.

No Response			
	A. Science		
	Like	In between	Do not like
1.6	54.0	35.1	9.3
	Easy	In between	Hard
6.2	36.6	44.6	12.5
	B. Social studies (History)		
	Like	In between	Do not like
2.8	41.9	34.4	20.9
	Easy	In between	Hard
5.3	31.8	43.0	19.9
	C. Mathematics		
	Like	In between	Do not like
2.3	65.1	21.3	11.3
	Easy	In between	Hard
4.5	42.0	40.3	13.2

(Continued)

How do you feel about these subjects in school?

No Response				
	D. Reading			
		Like	In between	Do not like
1.3		62.4	24.4	11.8
		Easy	In between	Hard
4.7		51.7	36.4	7.1
	E. Spelling			
		Like	In between	Do not like
1.5		57.2	29.6	11.7
		Easy	In between	Hard
4.3		52.7	33.5	9.5
	F. Physical Ed (P.E. or Gym)			
		Like	In between	Do not like
1.6		82.1	9.9	6.4
		Easy	In between	Hard
3.7		64.9	23.8	7.5

Release #: RE61051

NAEP #: 5-E61051-919-1

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 06-01

Timing: (in seconds)
Exercise Total Time 218

How often have you done these activities this year in learning mathematics—a lot, a little, or never? Fill in one oval on each line.

No Response		A lot	A little	Never
0.6	A. Taken mathematics tests	44.2	45.9	9.3
1.1	B. Done mathematics homework	42.5	44.9	11.5
1.3	C. Helped a classmate do mathematics	13.5	56.4	28.7
1.2	D. Played mathematics games	30.5	54.8	13.5
0.8	E. Listened to the teacher explain a mathematics lesson	84.9	11.4	3.0
0.4	F. Watched the teacher work mathematics problems on the board	78.4	17.7	3.6

(Continued)

How often have you done these activities this year in learning mathematics — a lot, a little, or never?

	No Response	A lot	A little	Never
G. Gotten individual help from the teacher on your mathematics	0.4	21.4	67.2	11.0
H. Gotten help from a classmate on mathematics	0.3	8.9	60.6	30.2
I. Discussed mathematics in class	0.6	49.3	37.7	12.3
J. Done mathematics laboratory activities	1.0	7.1	27.3	64.6
K. Used counters, rods, blocks, popsicle sticks or other objects	0.2	11.2	40.8	47.7
L. Used a scale to weigh objects in school	0.3	5.7	26.0	68.0

(Continued)

How often have you done these activities this year in learning mathematics — a lot, a little, or never?

	No Response	A lot	A little	Never
M. Worked mathematics problems at the board	0.3	38.7	53.7	7.4
N. Worked mathematics problems in small groups	0.7	15.5	49.2	34.6
O. Worked mathematics problems alone	0.3	71.3	21.6	6.8
P. Used your mathematics book	0.3	74.8	18.2	6.7
Q. Used a ruler or meter stick to measure things	0.1	30.1	56.8	13.0
R. Done work sheets	0.0	70.8	27.0	2.2

Release #: RE61951

NAEP #: 5-E61951-919-3

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 01-01

Timing: (in seconds)
Exercise Total Time 159

How often did you do these activities in your high school mathematics courses? Fill in one oval in each box.

No Response		Often	Sometimes	Never
0.4	A. Take mathematics tests	63.4	33.4	2.7
0.5	B. Do mathematics homework	57.4	35.9	6.2
0.6	C. Help a classmate do mathematics	14.6	72.2	12.6
0.5	D. Play mathematics games	2.5	46.2	50.8
0.5	E. Listen to the teacher explain a mathematics lesson	78.2	18.9	2.4
0.4	F. Watch the teacher work mathematics problems on the board	78.6	18.4	2.6

(Continued)

How often did you do these activities in your high school mathematics courses?

No Response	Item	Often	Sometimes	Never
0.3	G. Get individual help from the teacher on your mathematics	18.3	70.2	11.2
0.3	H. Make reports or do projects on mathematics	1.4	23.4	74.9
0.2	I. Work ahead in your mathematics book	7.3	41.8	50.7
0.4	J. Do mathematics problems that are not assigned	3.4	46.1	50.1
0.4	K. Get help in mathematics from a classmate	17.3	74.2	8.1
0.4	L. Study mathematics topics that aren't in the textbook	2.7	32.2	64.7
0.6	M. Discuss mathematics in class	50.0	42.7	6.8

(Continued)

How often did you do these activities in your high school mathematics courses?

No Response	Item	Often	Sometimes	Never
0.3	N. Work mathematics problems at the board	26.9	60.1	12.7
0.3	O. Work mathematics problems in small groups	11.9	59.4	28.4
0.2	P. Work mathematics problems alone	79.5	18.9	1.4
0.2	Q. Do mathematics laboratory activities	1.5	18.2	80.1
0.2	R. Choose what mathematics you wanted to study	20.1	35.5	44.2
0.2	S. Use a mathematics textbook	86.5	10.6	2.7

Release #: BE62051

NAEP #: 5-E62051-919-1

1977-78 Content Area: E. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{9}{02\text{-}01}$

Timing: (in seconds)
Exercise Total Time 101

How do you feel about these activities in learning mathematics? First, are they easy for you or are they hard for you? Second, do you like to do them, or don't you like to do them? Finally, are they important, or not important? Fill in one oval on each line that describes your feelings about each activity. If you feel the activity is between the two choices, fill in the oval marked "In between."

No Response			
	A. Learning how to weigh objects in school with a scale		
1.5	Easy 38.6	In between 48.5	Hard 11.4
4.1	Like 57.8	In between 23.5	Do not like 14.6
3.4	Important 70.3	In between 20.8	Not important 5.4
	B. Dividing one number by another		
2.4	Easy 44.2	In between 37.6	Hard 15.7
3.6	Like 49.9	In between 28.9	Do not like 17.6
3.4	Important 76.3	In between 15.2	Not important 5.1

(Continued)

C. Learning about circles, triangles, and other shapes

No Response			
	Easy	In between	Hard
0.8	82.4	12.8	3.9
	Like	In between	Do not like
2.6	62.9	24.4	10.2
	Important	In between	Not important
3.0	52.3	34.0	10.6

D. Doing subtraction problems where you have to borrow, like the one in this example.

$$\boxed{\begin{array}{r} \overset{6}{\cancel{7}}\,\overset{1}{3} \\ -28 \\ \hline 45 \end{array}}$$

No Response			
	Easy	In between	Hard
1.3	58.5	28.6	11.6
	Like	In between	Do not like
1.9	46.9	31.1	20.1
	Important	In between	Not important
2.0	80.7	14.0	3.3

E. Checking a subtraction problem by addition, like the one in this example.

$$\boxed{\begin{array}{r} 53 \\ -37 \\ \hline 16 \end{array} \quad \begin{array}{r} 37 \\ +16 \\ \hline 53 \end{array}}$$

No Response			
	Easy	In between	Hard
1.3	65.8	23.7	9.2
	Like	In between	Do not like
2.1	50.8	31.0	16.0
	Important	In between	Not important
1.8	72.1	21.0	5.1

Release #: R362105

NAEP #: S-M62105-919-1

1977-78 Content Area: H. Other Topics
1977-78 Objective: Attitudes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 04-02

Timing: (in seconds)
Exercise Total Time 82

How do you feel about each of these statements about mathematics? Are they true about you, sometimes true about you or not true about you. Fill in one oval for each statement that describes your feelings.

No Response	Statement	True about me	Sometimes true about me	Not true about me
0.1	A. I really want to do well in mathematics.	78.5	19.3	2.1
0.2	B. My parents really want me to do well in mathematics.	90.9	7.6	1.3
0.3	C. Mathematics is fun for me.	45.3	46.3	8.1
0.3	D. I feel good when I solve a hard mathematics problem by myself.	74.9	19.9	4.9
0.1	E. Working with numbers upsets me.	11.8	32.0	56.1

Release #: RE70111E

NAEP #: 5-E70111E919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: Experiences with Mathematics

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	13 11-25	17 12-38
Timing: (in seconds) Exercise Total Time	96	95

The data for the exercise is given in pairs of lines under each part. The data in the upper line offset to the left is for 13-year-olds and the data in the lower line offset to the right is for 17-year-olds.

A. How often do you use a hand calculator? *Fill in one oval in each box.*

No Response			Almost Daily	A few times a week	Less than once a week	Once a month	Never
2.1 2.9	1.	In mathematics classes	1.6 5.3	2.8 9.1	3.6 7.1	4.6 12.3	85.2 63.
2.6 3.3	2.	In science classes	0.6 5.8	0.8 9.5	0.7 5.8	1.1 5.6	94.2 70.0
2.4 3.1	3.	When shopping	2.2 1.0	4.7 2.7	4.3 2.3	6.2 4.6	80.1 86.
2.9 3.7	4.	At a job	4.0 5.0	3.5 6.5	2.0 3.5	3.8 3.7	83.7 77.6
2.8 3.7	5.	At a hand calculator display at a store	4.2 1.6	5.4 2.1	8.4 4.3	24.4 23.5	54.7 64.7
2.5 2.5	6.	At home	12.1 6.3	19.7 20.0	15.3 18.3	23.8 24.7	26.5 28.1

B. Does your mathematics teacher ever have you use a hand calculator?

			Yes	No	I don't know.
2.3 2.7	1.	For computing during class?	5.4 26.9	88.7 61.5	3.4 9.0
2.5 2.9	2.	For computing during tests?	3.3 16.5	91.3 71.5	2.9 9.1
3.4 3.7	3.	For computing for homework?	18.7 34.7	70.1 50.8	7.8 10.8
2.7 3.4	4.	For solving story or application problems?	7.8 20.6	84.0 63.3	5.5 12.7
2.8 3.1	5.	For illustrating mathematical ideas in mathematics class?	4.2 11.6	86.5 70.8	6.5 14.5

Release #: RE0511

NAEP #: 5-RE0511-919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: Experiences with Mathematics

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

	13	17
Overlap: 1977-78 Package-Exercise:	10-01	10-01
Timing: (in seconds) Exercise Total Time	148	149

The data for the exercise is given in pairs of lines under each part. The data in the upper line offset to the left is for 13-year-olds and the data in the lower line offset to the right is for 17-year-olds.

A. Have you ever studied mathematics through computer instruction?

No Response	Yes	No	I don't know.
0.4	14.1	76.0	9.5
0.4	12.4	84.7	2.4

B. Do you think computers are useful for teaching mathematics?

	Yes	No	I don't know.
0.4	71.3	17.8	10.5
0.6	61.7	16.9	20.8

C. Do you have access to a computer terminal in your school for learning mathematics?

	Yes	No	I don't know.
0.8	11.8	63.5	24.0
0.4	24.9	54.2	20.5

D. 1 Do you know how to program a computer?

	Yes	No	I don't know.
0.3	8.0	88.1	3.6
0.3	12.8	84.1	2.8

2. If yes, what programming language do you know?

14.4	12.8	BASIC
0.3	0.4	ALGOL
0.3	0.8	FORTRAN
0.1	0.1	APL
8.4	2.9	Other
76.3	83.0	

(Continued)

E. Do you think computer programming is a good topic to study in a mathematics class?

No Response	Yes	No	I don't know.
1.2	65.0	23.1	10.7
0.3	71.3	17.1	11.3

F. Have you ever used a computer to

No Response		Yes	No	I don't know.
0.8	1. solve a linear programming problem?	6.8	84.7	7.7
0.6		7.9	88.3	3.2
0.8	2. solve a mathematical problem?	55.7	41.6	1.9
0.6		46.9	51.5	1.0
1.3	3. play a game?	39.9	57.1	1.7
0.6		49.4	48.7	1.3
1.0	4. process business, scientific, or social information?	9.7	85.0	4.4
0.7		12.9	84.7	1.7
1.3	5. perform statistical analysis of data?	6.8	83.5	8.4
0.6		9.0	87.4	3.0

G. Have you ever written a computer program to

No Response		Yes	No	I don't know.
1.1	1. solve a linear programming problem?	3.3	88.0	7.5
0.6		6.3	90.7	2.4
1.2	2. solve a mathematical problem?	28.2	65.6	4.9
0.5		19.3	78.8	1.4
1.1	3. play a game?	21.0	73.8	4.0
0.8		14.0	83.9	1.3
1.4	4. process business, scientific, or social information?	6.6	86.3	5.7
0.8		6.8	90.3	2.1
1.3	5. perform statistical analysis of data?	4.5	86.1	8.1
0.8		6.2	90.7	2.2

Release #: R000001

NAEP #: 5-000001-919-2

1977-78 Content Area: I. Other Topics
1977-78 Objective: Experiences with Mathematics

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 13 / 01-44

Timing: (in seconds)
Exercise Total Time 67

Note: This exercise appeared in all 13-year-old packages. The time given is the mean of the times across all packages. The package/exercise locations for the other age 13 packages are: 2-42, 3-42, 4-40, 5-42, 6-39, 7-43, 8-42, 9-40, 10-37, and 11-24.

For each of the following questions, fill in one oval in each box.

A. The metric system of measurement uses units like centimeters, liters, and kilograms. How often have you used the metric system?

No Response	Often	Seldom	Never	I don't know.
0.5	22.7	58.4	14.1	4.3

B. How often do you use a hand calculator?

No Response	Almost Daily	A few times a week	Less than once a week	Once a month	Never	I don't know.
0.5	5.1	17.7	18.0	22.2	30.0	6.5

C. Do you or your family own a hand calculator?

No Response	Yes	No	I don't know.
0.6	79.0	19.4	1.0

D. Does your school provide hand calculators for use in mathematics class?

No Response	Yes	No	I don't know.
0.5	6.5	87.1	5.9

Release #: E030002

WARP #: 5-000002-919-1

1977-78 Content Area: E. Other Topics
1977-78 Objective: Experiences with Mathematics

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 01-41

Timing: (in seconds)
Exercise Total Time 95

Note: This exercise appeared in all 9-year-old packages. The time given is the mean of the times across all packages. The package/exercise locations for the other age 9 packages are: 2-40, 3-40, 4-36, 5-42, 6-41, and 7-23.

For each of the following questions, fill in one oval in each box.

A. The metric system uses units like centimeters, liters and kilograms. Have you used the metric system of measurement?

No Response	Yes	No	I don't know.
0.7	54.3	29.0	15.9

B. How often have you used the metric system in mathematics?

No Response	Often	Sometimes	Never	I don't know.
1.1	12.8	45.9	26.9	13.2

C. How often have you used a hand calculator?

No Response	Often	Sometimes	Never	I don't know.
0.9	31.2	41.3	22.9	3.7

D. Do you or your family own a hand calculator?

No Response	Yes	No	I don't know.
0.9	75.8	19.6	3.7

E. Does your school have hand calculators that you can use in mathematics class?

No Response	Yes	No	I don't know.
0.7	8.9	79.2	11.1

Release #: R000003

NAEP #: 5-000003-919-3

1977-78 Content Area: E. Other Topics
1977-78 Objective: Experiences with Mathematics

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 01-41

Timing: (in seconds)
Exercise Total Time 60

Note: This exercise appeared in all 17-year-old packages. The time given is the mean of the times across all packages. The package/exercise locations for the other age 17 packages are: 2-42, 3-42, 4-39, 5-39, 6-40, 7-39, 8-37, 9-40, 10-43, 11-37, and 12-31.

For each of the following questions, fill in one oval in each box.

A. The metric system of measurement uses units like centimeters, liters, and kilograms. How often have you used the metric system of measurement?

No Response	Often	Seldom	Never	I don't know.
0.8	18.2	58.8	20.4	1.8

B. How often do you use a hand calculator?

No Response	Almost Daily	A few times a week	Less than once a week	Once a month	Never	I don't know.
0.8	11.5	21.9	18.4	22.5	21.2	3.6

C. Do you or your family own a hand calculator?

No Response	Yes	No	I don't know.
0.9	85.8	12.9	0.5

D. Does your school provide hand calculators for use in mathematics classes?

No Response	Yes	No	I don't know.
0.9	15.4	73.5	10.2

E. Does your school provide hand calculators for use in other classes?

No Response	Yes	No	I don't know.
0.9	16.5	64.3	18.4

Release #: R003004

NAEP #: 5-000004-919-3

1977-78 Content Area: E. Other Topics
1977-78 Objective: Experiences with Mathematics

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 01-42

Timing: (in seconds)
Exercise Total Time 102

Note: This exercise appeared in all 17-year-old packages. The time given is the mean of the times across all packages. The package/exercise locations for the other age 17 packages are: 2-43, 3-43, 4-40, 5-43, 6-41, 7-40, 8-38, 9-41, 10-41, 11-38, and 12-32.

Which of the following mathematics courses have you studied? Fill in one oval on each line. (If you have not studied a particular course, fill in the oval under "Not Studied".)

		No Response	Studied 1 school year	Studied ½ school year	Studied less than ½ year	Not studied	I don't know.
A.	General, Business or Consumer Mathematics	2.7	38.1	7.6	3.0	45.2	3.4
B.	Introduction to Algebra (Pre-Algebra)	2.7	38.3	7.4	6.9	42.0	2.7
C.	1st year Algebra	2.0	67.5	4.6	1.5	23.6	0.8
D.	2nd year Algebra	4.7	29.1	7.8	1.2	56.1	1.2
E.	Geometry	2.9	45.6	5.8	3.3	41.6	0.8
F.	Trigonometry	5.8	6.4	6.5	5.8	74.2	1.3
G.	Probability & Statistics	6.1	1.0	1.7	6.0	81.6	3.6
H.	Computer Programming	5.5	2.2	2.8	4.3	83.9	1.2
I.	Pre-Calculus/ Calculus	5.6	2.3	1.6	1.4	87.1	2.0

APPENDIX B

RELEASED COGNITIVE EXERCISES FROM THE 1977-78 MATHEMATICS ASSESSMENT

Release #: RA10211

NAEP #: 5-A10211-919-12

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 1A. Recall and Recognition

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 9 13
1977-78 Package-Exercise: 01-02 10-04

Timing: (in seconds)
Exercise Total Time 40 34

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PARC	HCTY	SMPL
PART A												
AGE 9	P	55.8	49.1	47.7	58.5	67.5*	51.6*	59.9*	47.7*	66.1*	64.1	53.3
	SE	1.9	4.3	5.0	3.1	2.9	2.4	2.3	4.0	2.4	4.3	3.2
GRD 4	P	62.8	56.3	55.3	66.1	71.7*	60.0	65.3	53.2*	72.8*	72.0	61.1
	SE	2.1	4.9	6.2	3.0	3.1	2.7	2.4	3.9	2.6	6.3	3.3
AGE 13	P	82.3	78.9*	82.6	82.6	84.6	82.1	82.4	77.3*	87.7*	90.8*	79.9
	SE	1.1	1.4	2.4	2.1	2.1	1.3	1.4	2.9	1.8	3.8	1.1
GRD 8	P	84.5	81.8	86.1	83.6	85.7	85.0	84.0	78.9*	89.2*	93.7*	81.8
	SE	1.1	1.9	2.6	2.1	2.0	1.5	1.4	3.0	1.7	2.5	1.5
PART B												
AGE 9	P	48.4	43.7	38.5*	52.3	58.3*	45.0*	51.8*	39.2*	58.6*	59.3*	46.0
	SE	1.9	3.9	5.5	2.4	2.8	2.1	2.5	3.4	4.2	5.3	3.0
GRD 4	P	57.6	50.4	50.8	63.9	63.5	56.3	58.8	46.2*	70.1*	69.8	55.0
	SE	2.1	4.1	6.7	3.2	3.3	2.3	2.6	3.4	4.0	6.7	3.2
AGE 13	P	84.1	77.8*	84.0	86.8	86.6	84.4	83.8	78.1*	91.4*	90.0*	81.9*
	SE	1.0	1.9	2.6	1.5	1.5	1.3	1.4	2.2	1.5	1.7	1.4
GRD 8	P	86.6	83.3	86.6	86.8	88.7	88.4	85.1	80.7*	92.9*	94.9*	83.4*
	SE	1.0	2.1	2.3	2.1	1.7	1.2	1.3	2.6	1.3	2.1	1.5

2079

A. What digit is in the tens place in the number in this box?

○ 2
○ 0
● 7
○ 9

○ I don't know.

23, 456

B. What digit is in the thousands place in the number in this box?

○ 2
● 3
○ 4
○ 5
○ 6

○ I don't know.

Release #: RA10521

NAEP #: 5-A10521-919-1

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 05-11

Timing: (in seconds)
Exercise Total Time 40

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
PART A												
AGE 9	P	95.5	91.7*	95.8	98.4*	95.6	95.0	96.0	94.9	97.4*	96.2	94.6
	SE	0.7	1.9	1.8	0.4	0.9	0.8	0.8	1.7	0.8	2.6	1.1
GRD 4	P	97.4	95.9	97.0	99.6*	96.9	97.1	97.7	97.0	98.0	98.3	97.1
	SE	0.6	1.4	1.8	0.3	0.7	0.7	0.6	1.4	0.9	1.1	0.9
PART B												
AGE 9	P	94.8	91.3*	94.7	98.3*	94.5	94.9	94.8	93.7	96.6	94.5	94.8
	SE	0.7	1.6	2.0	0.7	1.2	0.9	1.0	1.8	1.4	3.4	1.0
GRD 4	P	97.5	96.7	97.0	99.4*	96.9	97.4	97.6	96.2	97.7	97.8	97.8
	SE	0.6	1.2	1.7	0.2	1.1	0.8	0.6	1.4	1.3	1.6	0.6
PART C												
AGE 9	P	91.3	85.9*	92.1	94.0*	93.5	91.3	91.4	86.9*	95.0*	93.6	90.6
	SE	0.9	2.0	2.3	0.9	1.2	0.9	1.2	2.3	1.3	3.0	1.4
GRD 4	P	94.7	91.1*	95.1	95.7	96.4	94.7	94.8	90.7*	96.8	96.8	94.7
	SE	0.8	2.1	2.2	0.8	1.1	1.0	1.0	1.7	1.3	1.3	1.4
PART D												
AGE 9	P	93.2	86.9*	93.3	96.5*	95.2	93.5	92.8	89.8*	97.5*	97.0	91.5
	SE	0.8	2.0	1.5	0.8	1.1	0.9	1.0	1.7	0.9	2.8	1.2
GRD 4	P	95.6	91.3*	95.7	98.3*	96.6	96.2	95.1	93.4	98.3*	99.3*	94.5
	SE	0.6	2.0	1.0	0.6	0.9	0.9	0.8	1.2	0.9	0.8	1.1

A. What number is 1 MORE than 64?

ANSWER ______________

B. What number is 1 MORE than 79?

ANSWER ______________

C. What number is 1 LESS than 80?

ANSWER ______________

D. What number is 1 LESS than 46?

ANSWER ______________

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 65

20 = OTHER

21 = 63

22 = 64

23 = 74

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 80

20 = OTHER

21 = 78

22 = 79

23 = 89

39 = I DON'T KNOW.

SCORING GUIDE: PARTS C & D

Categories are listed below.

PART C:

00 = NO RESPONSE

11 = 49

20 = OTHER

21 = 51

22 = 50

23 = 40

24 = 60

25 = 59

39 = I DON'T KNOW.

PART D:

00 = NO RESPONSE

11 = 45

20 = OTHER

21 = 47

22 = 46

23 = 36

24 = 56

39 = I DON'T KNOW.

Release #: RA10832

NAEP #: S-A10832-919-1

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap: 9
1977-78 Package-Exercise: 01-16

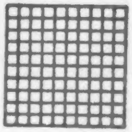
Timing: (in seconds)
Exercise Total Time 45

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	DC	PARC	HCTY	SMPL
AGE 9	P	70.4	60.7*	66.1	76.6*	76.8*	71.8	68.9	60.9*	77.2*	79.7*	69.9
	SE	1.4	3.1	2.2	2.9	2.7	1.8	1.8	3.3	2.4	3.5	1.8
GRD 4	P	77.7	68.0*	74.8	86.3*	80.8	81.2*	74.5*	71.2*	84.0*	88.8*	75.7
	SE	1.5	2.6	3.4	2.0	2.8	1.7	1.9	2.7	2.7	3.3	2.0

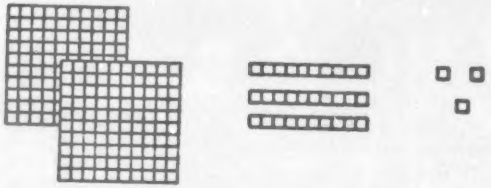
This is a postage stamp:

This is a strip of 10 stamps:

And this is a sheet of 100 stamps:



Here is Teddy's stamp collection. How many stamps does Teddy have?



○ 110

○ 133

○ 232

● 233

○ 332

○ I don't know.

Release #: RA11346

NAEP #: 5-A11346-919-2

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4D. Reasoning and Making Judgments

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 13
1977-78 Package-Exercise: 04-15

Timing: (in seconds)
Exercise Total Time 33

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 13	P	73.3	65.7*	71.2	79.7*	75.3	73.5	73.0	69.1	78.5*	81.4*	71.8
	SE	1.2	2.5	2.2	2.4	2.2	1.4	1.5	3.0	2.7	3.8	1.3
GRD 8	P	79.4	75.4	75.0	85.7*	80.5	79.9	78.9	76.5	82.9	85.8*	78.0
	SE	1.3	3.2	2.3	2.1	2.6	1.8	1.7	3.1	2.8	2.0	1.6

2■79

In the numeral above, the hundreds digit is covered by a box. If this numeral is less than 2100, what is the largest digit that can be under the box?

ANSWER ____________

A11346-2

SCORING GUIDE

Categories are listed below.

0 = NO RESPONSE

1 = 0 OR 2079

2 = 2079

3 = OTHER

4 = 1 OR 2179

5 = 9 OR 2979

9 = I DON'T KNOW.

Release #: RA11932

NAEP #: S-A11932-919-23

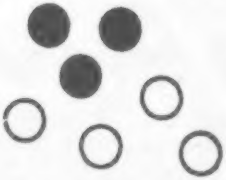
1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap:
1977-78 Package-Exercise: $\frac{13}{09\text{-}10}$ $\frac{17}{03\text{-}17}$

Timing: (in seconds)
Exercise Total Time 38 37

			REGION				SEX		COMMUNITY SIZE (SOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A												
AGE 13	P	49.0	46.9	39.0*	53.3	55.4*	43.9*	54.4*	48.8	55.9*	47.2	46.3
	SE	1.7	3.6	2.0	3.7	3.3	2.0	2.2	2.6	3.0	5.6	2.8
GRD 8	P	56.1	56.3	43.9*	59.5	61.9*	51.3*	60.6*	56.3	62.1*	51.1	54.0
	SE	1.6	3.5	2.8	3.5	2.3	2.2	2.4	3.0	3.2	3.7	3.1
AGE 17	P	60.4	53.8*	52.4*	67.1*	65.2	56.2*	64.4*	54.2*	65.8*	73.4*	59.3
	SE	1.5	2.9	3.4	1.9	3.3	1.7	2.0	3.0	2.4	4.4	2.1
GRD 11	P	64.6	59.8	58.4	69.2	68.3	61.1*	67.6*	57.3*	70.3	77.1*	63.8
	SE	1.9	3.1	5.0	2.6	4.3	2.4	2.2	3.8	3.0	5.1	2.6
PART B												
AGE 13	P	66.9	63.5	58.3*	70.5	73.9*	63.3*	70.7*	66.6	70.9	70.1	64.4
	SE	1.6	3.7	3.0	3.2	2.4	2.0	2.0	2.4	3.7	8.1	2.8
GRD 8	P	73.2	72.1	62.0*	76.9	79.0*	69.6*	76.6*	72.4	77.6	74.7	70.9
	SE	1.4	3.2	2.6	2.9	1.9	2.2	1.7	2.4	2.6	6.3	2.9
AGE 17	P	78.5	73.4*	69.5*	82.4*	86.4*	74.9*	81.8*	76.1	84.6*	88.6*	75.4*
	SE	1.1	2.7	1.5	2.2	1.8	1.4	1.4	2.0	2.2	3.5	1.9
GRD 11	P	81.5	77.6	74.7*	83.2	89.2*	78.4*	84.2*	79.0	87.6*	89.0	78.7
	SE	1.4	2.3	2.7	2.7	2.4	1.7	1.6	2.5	2.7	4.2	2.0



There is a fraction which tells what part of this set of circles is shaded.

A. What is the DENOMINATOR of the fraction?

- ○ 3
- ○ 4
- ● 7
- ○ $\frac{3}{7}$

○ I don't know.

B. What is the NUMERATOR of the fraction?

- ● 3
- ○ 4
- ○ 7
- ○ $\frac{3}{7}$

○ I don't know.

Release #: 8A12021

NAEP #: S-A12021-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{13}{10\text{-}07}$ $\frac{17}{05\text{-}27}$

Timing: (in seconds)
Exercise Total Time 72 72

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SRPL
PART A1												
AGE 13	P	77.0	68.6*	70.4	83.3*	87.4*	74.4*	81.0*	73.4	86.5*	85.4*	73.6
	SE	1.8	3.0	5.2	1.7	1.5	2.1	1.9	3.1	2.4	3.2	3.2
GRD 8	P	87.2	83.1	81.0	91.1	91.9	85.5	88.6	85.8	93.1*	92.5*	83.0*
	SE	1.6	2.1	5.3	1.3	1.9	1.9	1.7	2.4	1.7	1.8	2.9
AGE 17	P	92.8	90.7	90.9	94.8*	[illegible]	92.5	93.0	91.5	92.1	95.7	93.4
	SE	0.8	1.6	2.3	0.9	1.7	1.2	0.9	1.9	2.1	1.9	1.1
GRD 11	P	95.0	91.6	94.5	96.7	95.7	95.1	94.9	94.0	95.4	98.9*	94.6
	SE	0.7	1.8	2.0	0.8	1.2	1.0	0.9	1.6	1.4	1.1	1.1
PART A2												
AGE 13	P	56.9	46.6*	51.9	54.7	68.5*	51.5*	62.0*	50.0*	67.2*	67.1	52.7
	SE	1.9	3.5	5.1	2.9	1.8	2.1	2.0	3.3	3.3	6.0	3.2
GRD 8	P	66.4	58.1	62.6	69.4	72.8*	62.8	69.4*	61.7	78.2*	80.2*	60.4*
	SE	2.1	5.8	6.1	2.1	2.2	2.0	2.0	3.5	3.1	4.4	3.5
AGE 17	P	77.7	72.4	75.9	78.0	83.7*	76.0	79.4	75.5	76.7	81.3	78.9
	SE	1.5	2.8	3.3	2.5	3.0	1.7	1.8	3.0	3.0	2.8	2.2
GRD 11	P	82.1	74.2*	81.5	83.6	87.3*	81.4	82.8	80.3	81.1	89.0*	82.5
	SE	1.3	2.6	3.0	2.2	2.5	1.3	1.7	2.8	3.1	2.1	1.9
PART A3												
AGE 13	P	57.5	46.8*	51.5*	60.8	69.6*	55.0*	59.8*	47.1*	67.2*	67.5	55.2
	SE	1.7	3.3	3.7	3.2	1.6	2.1	1.8	3.2	3.0	6.0	3.1
GRD 8	P	68.4	58.0*	63.0	75.3*	74.1*	68.4	68.4	59.2*	75.8*	79.6*	65.3
	SE	1.5	3.7	4.0	2.8	1.5	2.2	1.6	3.3	2.7	4.2	2.7
AGE 17	P	79.0	73.0*	76.6	79.1	86.3*	78.9	79.0	76.6	79.5	83.6	79.3
	SE	1.4	3.1	3.3	2.1	2.3	1.7	1.6	3.2	3.6	3.3	1.9
GRD 11	P	82.7	75.0*	80.4	83.0	89.9*	80.0	81.5	81.3	82.0	91.2*	82.4
	SE	1.5	2.8	4.2	2.6	1.7	2.0	1.8	2.5	4.1	2.9	2.3
PART B1												
AGE 13	P	70.7	56.1*	70.7	77.3*	75.9*	69.8	71.6	62.9*	75.9*	77.5	70.2
	SE	1.6	3.4	3.2	2.9	2.1	2.0	1.8	3.0	2.5	3.7	3.1
GRD 8	P	78.6	66.5*	77.5	86.2*	80.9	78.7	78.5	71.9*	81.3	87.4*	77.8
	SE	1.4	4.0	2.9	2.3	2.1	1.7	1.7	3.2	2.4	2.8	2.7
AGE 17	P	84.2	77.6*	83.3	86.6	87.4	84.8	83.6	81.5	86.5	86.5	84.2
	SE	1.5	3.5	3.7	1.8	2.9	1.7	1.7	2.9	2.8	2.4	2.2
GRD 11	P	87.6	83.2	86.3	89.6	89.5	89.9*	85.7	86.4	87.7	91.6*	87.5
	SE	1.4	2.6	4.3	1.5	2.2	1.3	1.9	2.7	2.7	1.1	2.4

A. Reduce the following fractions to lowest terms.

[illegible] = ______________________

$\frac{14}{[illegible]}$ = ______________________

$\frac{18}{24}$ = ______________________

B. Change each of the following fractions to an equivalent fraction having the given denominator.

[illegible] = [illegible]

[illegible] = [illegible]

EXERCISE: A12021 NAEP NO: A12021-

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	EXRC	MCTY	SUPL
PART B2												
AGE 13	P	65.4	49.9*	64.4	71.7*	73.0*	62.0*	67.8*	55.7*	71.9*	78.0*	63.8
	SE	1.5	3.8	3.0	2.5	2.2	2.0	1.8	3.1	2.8	4.9	2.9
GRD 8	P	73.9	59.7*	72.6	81.5*	78.0	74.0	73.9	66.5*	77.8	89.7*	71.0
	SE	1.6	4.7	3.0	2.6	2.4	2.0	1.9	3.7	2.8	3.7	2.9
AGE 17	P	79.6	70.6*	77.7	83.4	83.9	80.0	79.2	76.9	82.1	83.3	79.3
	SE	1.4	3.1	3.2	2.3	2.5	1.7	1.8	3.8	3.2	4.1	1.7
GRD 11	P	83.0	75.2*	80.0	86.6	87.3*	85.3	81.0	81.0	82.5	91.5*	82.9
	SE	1.4	2.6	4.1	2.1	1.9	1.4	2.1	3.7	3.4	3.0	2.2

SCORING GUIDE: PARTS A1 & A2

Categories are listed below.

PART A1:

00 = NO RESPONSE

11 = 1/3

20 = OTHER

21 = 3/9

22 = 1/6

23 = 3

24 = NOT USED

25 = 3/3 OR 1

39 = I DON'T KNOW.

PART A2:

00 = NO RESPONSE

11 = 2/5

20 = OTHER

21 = 14/35

22 = 2/7

23 = 7/5

24 = NOT USED

25 = 7/7 OR 1

39 = I DON'T KNOW.

SCORING GUIDE: PART A3

Categories are listed below.

PART A3:

00 = NO RESPONSE

11 = 3/4

20 = OTHER

21 = 18/24

22 = 9/12 OR 6/8

23 = 1/2 OR EQUIVALENT COMMON FRACTION

24 = 4/6, 2/3 OR EQUIVALENT COMMON FRACTION

25 = 6/6, 2/2, 1 OR EQUIVALENT

39 = I DON'T KNOW.

SCORING GUIDE: PARTS B1 & B2

Categories are listed below.

PART B1:

00 = NO RESPONSE

11 = 4 OR 4/6

20 = OTHER

21 = 5 OR 5/6

22 = 1

23 = 2

24 = 6

39 = I DON'T KNOW.

PART B2:

00 = NO RESPONSE

11 = 12 OR 12/32

20 = OTHER

21 = 27 OR 27/32

22 = 4

23 = 24

39 = I DON'T KNOW.

Release #: BA12311

NAEP #: S-A12311-919-2

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 1A. Recall and Recognition

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: $\frac{13}{06-10}$
1977-78 Package-Exercise:

Timing: (in seconds)
Exercise Total Time 13

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 13	P	76.7	67.7*	79.4	80.1	83.2*	73.6*	79.8*	74.7	84.9*	76.8	73.4
	SE	1.5	4.1	3.5	2.0	1.8	2.0	1.9	2.8	2.3	2.8	2.7
GRD 8	P	81.6	72.8	79.3	84.2	87.7*	79.1	83.7	79.6	88.7*	91.0*	76.7*
	SE	1.6	5.4	3.3	1.8	1.4	2.2	1.6	2.6	2.0	3.0	3.0

What is the denominator of $\frac{3}{5}$?

○ $\frac{3}{5}$

○ 3

● 5

○ 8

○ I don't know.

Release #: NA13031

NAEP #: S-A13031-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3A. Translation

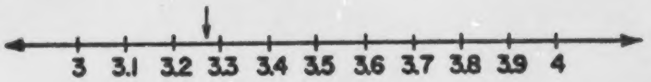
Exercise Type: Open Ended
Stimulus Type: Text/Tape/Graph

Overlap: 13 17
1977-78 Package-Exercise: 08-35 07-13

Timing: (in seconds)
Exercise Total Time 46 43

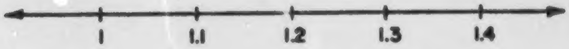
			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PARC	HCTY	SMPL
PART A												
AGE 13	P	33.9	20.2*	33.5	38.9	41.4*	38.2*	29.4*	28.0*	43.6*	41.8	31.1
	SE	1.5	2.2	4.0	3.1	2.6	2.0	1.6	3.1	3.6	4.5	2.0
GRD 8	P	40.5	25.7*	39.8	47.9*	45.6*	47.0*	34.5*	35.0	48.4*	49.7	37.1
	SE	1.6	2.3	4.1	4.1	2.3	2.2	1.8	3.2	3.1	5.6	2.0
AGE 17	P	63.8	53.9*	59.8	71.1*	66.6	70.3*	57.6*	57.7	69.0	70.9	62.7
	SE	1.3	2.8	2.2	2.2	3.5	1.8	1.9	3.8	3.1	6.1	1.9
GRD 11	P	66.5	57.8*	62.7	73.6*	68.0	75.5*	58.6*	60.9	69.9	75.7*	65.9
	SE	1.5	2.6	2.5	2.8	3.6	1.8	2.1	4.1	3.8	4.1	2.2
PART B												
AGE 13	P	45.6	32.4*	46.6	52.9*	48.4	48.3*	42.9*	39.4	54.2*	52.6	43.6
	SE	1.7	3.4	4.2	3.0	3.1	1.8	1.9	3.8	3.7	4.6	2.2
GRD 8	P	51.8	39.3*	53.4	60.9*	51.5	56.1*	47.8*	46.0	60.1*	55.4	49.6
	SE	1.8	4.0	4.8	3.1	2.4	2.2	2.1	3.7	3.4	6.1	2.4
AGE 17	P	68.6	57.7*	67.4	75.9*	70.8	71.5*	65.9*	60.4*	76.3*	71.9	67.8
	SE	1.4	2.0	3.4	2.0	3.8	2.0	1.8	3.7	2.3	5.0	2.1
GRD 11	P	71.5	61.3*	71.0	77.7*	71.9	76.5*	67.1*	64.6*	77.6*	69.7	71.5
	SE	1.3	2.6	2.9	2.3	2.9	1.7	2.0	3.8	2.9	4.3	1.9

A. The arrow shows a point on the number line. Write a number that could represent that point.



ANSWER ______________

B. Draw an arrow to mark the point 1.24 on this number line.



A13031-23
PARTS A&B

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 3.275 OR 3.2 3/4 WITH OR WITHOUT PARENTHESES

12 = ANY NUMBER FROM 3.260 TO 3.290 EXCEPT CATEGORY 11

20 = OTHER

21 = ANY NUMBER FROM 3.20 TO 3.249

22 = 3.3

23 = ANY NUMBER FROM 3.250 TO 3.259 OR 3.291 TO 3.299

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = ARROW IS IN THE INTERVAL 1.23 TO 1.25, INCLUDING 1.23 AND 1.25

20 = OTHER

21 = ARROW IS IN THE INTERVAL 1.20 TO 1.22 OR 1.26 TO 1.3, INCLUDING 1.2 AND 1.3

22 = ARROW IS BETWEEN 1 AND 1.1, INCLUDING 1 AND 1.1

23 = ARROW IS IN THE INTERVAL 1.22 TO 1.23, INCLUDING 1.22

24 = ARROW IS IN THE INTERVAL 1.25 TO 1.26, INCLUDING 1.26

39 = I DON'T KNOW.

Release #: RA13332

NAEP #: S-A13332-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{13}{10\text{-}28}$ $\frac{17}{03\text{-}05}$

Timing: (in seconds)
Exercise Total Time 43 41

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	BCTY	SMPL
PART A												
AGE 13	P	80.5	74.0*	81.3	82.6	83.0	81.8	79.2	73.5*	85.4*	82.7	80.8
	SE	1.3	3.7	3.0	1.5	1.8	1.4	1.6	2.8	1.9	3.7	2.2
GRD 8	P	85.4	77.2*	85.6	88.5	87.9	87.5	83.6	80.6	88.2	92.6*	84.0
	SE	1.2	3.9	2.8	1.6	1.6	1.4	1.6	2.8	1.6	2.4	2.1
AGE 17	P	94.2	90.7*	93.6	96.4*	[illegible]	96.3*	92.3*	89.6*	95.7	96.0	95.5
	SE	0.7	1.4	1.9	0.9	1.1	0.7	1.0	2.0	1.1	1.1	1.0
GRD 11	P	95.6	92.6	96.0	97.5*	95.2	98.1*	93.6*	91.4*	95.8	95.7	97.7*
	SE	0.6	2.1	1.2	0.7	1.1	0.5	1.1	2.3	1.2	1.2	0.4
PART B												
AGE 13	P	78.7	79.3	78.2	81.4	75.5	77.1	80.3	80.7	75.8	80.6	78.8
	SE	1.1	2.0	2.3	2.1	2.0	1.8	1.2	2.4	1.6	3.4	1.7
GRD 8	P	76.9	76.5	77.0	81.1	73.3	75.7	78.0	78.9	74.1	76.8	77.8
	SE	1.3	2.8	2.3	2.6	2.3	1.9	1.5	3.3	1.7	4.7	2.0
AGE 17	P	76.4	78.9	70.7*	79.9	75.6	79.1*	73.9*	78.5	76.4	75.3	75.5
	SE	1.2	2.5	2.8	2.3	2.1	1.3	2.0	2.0	3.3	8.0	1.2
GRD 11	P	75.9	78.1	71.3	79.3	73.6	79.9*	72.4*	78.5	75.3	75.2	75.0
	SE	1.5	2.6	4.1	2.5	2.3	1.5	2.2	2.6	4.3	6.1	1.4
PART C												
AGE 13	P	46.3	35.3*	47.7	52.3*	47.4	48.9*	43.9*	37.0*	51.8*	49.8	47.2
	SE	1.7	2.3	4.3	3.0	2.5	2.4	1.7	4.2	2.9	4.7	2.4
GRD 8	P	54.0	44.1*	54.6	62.7*	52.3	58.2*	50.6	48.5	56.1	60.4	53.7
	SE	1.8	3.5	3.9	4.0	2.9	2.5	2.0	4.8	3.2	4.7	2.8
AGE 17	P	72.1	56.6*	70.9	79.3*	76.9*	76.4*	68.1*	66.0*	79.5*	78.4	70.5
	SE	1.6	4.0	3.9	2.4	2.4	2.1	1.8	2.9	3.1	4.9	2.6
GRD 11	P	75.6	60.8*	75.2	81.9*	79.3	80.4*	71.4*	69.6	81.0	75.8	75.5
	SE	1.5	6.2	3.9	2.2	2.0	2.4	1.8	3.0	3.8	5.5	2.1

A. Which number is greater?

● 1.9
○ 0.22

○ I don't know.

B. Which number is greater?

○ 1.15
● 1.36

○ I don't know.

C. Which number is the greatest?

○ .19
○ .036
○ .195
● .2

○ I don't know.

Release #: NA13732

NAEP #: S-A13732-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	10-24	06-24
Timing: (in seconds)		
Exercise Total Time	60	60

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 13	P	56.7	45.1*	52.8	50.2	69.8*	55.4	57.9	49.5	66.9*	62.6	53.6
	SE	2.0	4.6	4.1	3.5	2.9	2.5	2.1	4.4	3.7	6.7	3.1
GRD 8	P	67.6	55.2*	64.0	70.6	76.6*	68.2	67.0	63.7	73.8*	77.5	63.1
	SE	2.0	6.1	3.9	4.0	2.8	2.7	2.5	4.4	3.5	7.6	3.3
AGE 17	P	81.2	71.8*	75.1*	86.6*	87.8*	81.8	80.6	73.6*	85.7	89.5	81.3
	SE	1.2	2.9	2.9	1.5	2.1	1.5	1.6	2.6	2.5	4.8	1.7
GRD 11	P	84.7	77.8	79.3	88.9*	89.5*	85.9	83.7	78.8*	88.4	91.3	84.5
	SE	1.4	4.3	3.3	1.6	2.2	1.9	1.6	3.1	2.3	3.7	2.1
PART B												
AGE 13	P	27.4	25.6	23.2	25.5	35.8*	25.5	29.1	26.4	26.0	40.4*	25.4
	SE	1.5	2.8	3.3	2.2	3.7	1.9	1.9	2.6	3.1	5.3	2.0
GRD 8	P	31.7	30.0	26.8	30.5	38.3*	32.6	30.9	31.9	28.7	47.4*	29.3
	SE	1.7	4.0	3.2	3.1	3.7	2.2	2.1	3.3	3.4	4.3	2.6
AGE 17	P	44.3	37.6*	44.3	47.6	45.7	49.6*	39.2*	44.1	49.4*	51.0	40.9*
	SE	1.6	2.6	3.4	3.2	3.0	2.1	2.3	3.6	2.4	8.4	2.1
GRD 11	P	45.3	37.4*	43.4	50.5*	46.2	52.2*	39.3*	46.8	51.2*	48.8	40.8*
	SE	1.8	4.1	3.4	2.9	3.7	2.5	2.6	3.7	2.2	9.8	2.4
PART C												
AGE 13	P	68.3	64.7	69.0	65.7	74.2*	64.1*	72.3*	64.8	69.9	79.7*	66.5
	SE	1.5	2.9	4.3	2.8	1.5	1.7	1.9	2.8	3.3	1.7	2.4
GRD 8	P	75.2	74.1	76.7	72.6	77.1	72.6	77.4	74.7	75.1	86.7*	72.5
	SE	1.7	3.0	4.8	2.9	2.0	1.9	2.0	2.4	2.8	1.8	3.0
AGE 17	P	76.8	78.2	72.1*	78.4	78.0	78.6	75.0	69.5*	76.4	83.5	79.6*
	SE	1.4	3.0	2.6	2.4	2.8	1.5	1.9	1.8	2.8	5.8	1.8
GRD 11	P	77.6	79.5	71.6*	80.0	78.2	79.9	75.6	72.5	76.3	79.8	80.4
	SE	1.5	3.9	3.0	2.2	2.9	1.6	2.0	2.6	3.2	6.6	2.1

A. Change 25% to a common fraction.

ANSWER ____

B. Change 125% to a decimal fraction.

ANSWER ____

C. Change .15 to a percent.

ANSWER ____

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 1/4, 25/100 OR EQUIVALENT COMMON FRACTION

20 = OTHER

21 = 1/25

22 = 2/5

23 = 1, 25/25, 5/5 OR EQUIVALENT

24 = 1/5

25 = .25

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 1.25 OR EQUIVALENT DECIMAL NUMBER

20 = OTHER

21 = 125 WITH ANY DECIMAL PLACEMENT INCLUDING THOSE WRITTEN WITH PERCENT SIGN EXCEPT CATEGORY 11

22 = 1/125

23 = 1.4

24 = 1 2/5

25 = 125/100, 1 1/4 OR EQUIVALENT COMMON FRACTION

39 = I DON'T KNOW.

SCORING GUIDE: PART C

Categories are listed below.

00 = NO RESPONSE

11 = 15% OR 15

20 = OTHER

21 = THE DIGITS 15 WITH ANY DECIMAL PLACEMENT INCLUDING THOSE WRITTEN WITH PERCENT SIGN EXCEPT CATEGORY 11

39 = I DON'T KNOW.

Release #: RA14331

NAEP #: 5-A14331-919-123

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3A. Translation

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise:

	9	13	17
Overlap: 1977-78 Package-Exercise:	01-17	04-04	09-11
Timing: (in seconds) Exercise Total Time	40	40	30

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 9	P	2.6	2.7	2.4	2.7	2.6	3.3	2.0	2.9	2.4	2.5	2.6
	SE	0.4	0.7	0.9	0.7	0.8	0.7	0.4	0.8	0.7	1.3	0.5
GRD 4	P	2.3	2.3	2.5	2.7	1.9	3.0	1.8	2.4	1.6	2.6	2.6
	SE	0.4	0.7	1.1	0.9	0.7	0.8	0.4	0.9	0.6	1.5	0.7
AGE 13	P	53.9	40.3*	50.6	64.2*	5* 6	55.9	51.9	49.8	58.7	64.0	52.2
	SE	2.0	4.6	3.8	3.2	5.1	2.3	2.4	3.6	3.7	8.2	3.0
GRD 8	P	61.8	50.7*	57.4	74.5*	62.3	64.9	58.8*	57.2	64.5	71.2	61.2
	SE	2.4	5.9	4.7	2.2	5.9	3.1	2.5	4.0	4.6	6.5	4.1
AGE 17	P	71.0	66.3	66.1*	78.5*	69.6	74.4*	67.7*	63.6*	69.8	82.9*	72.9
	SE	1.4	3.4	2.5	2.3	3.5	1.8	1.9	3.3	2.5	2.7	2.0
GRD 11	P	74.6	75.1	69.6	80.1*	70.8	79.2*	70.5*	68.1*	72.0	88.0*	76.4
	SE	1.5	3.7	3.3	2.3	3.0	1.9	2.3	3.4	2.7	3.9	2.1
PART B												
AGE 9	P	19.0	19.3	15.6	19.6	21.5	19.5	18.6	19.5	19.9	21.7	17.9
	SE	1.3	1.6	2.2	2.0	2.0	1.6	1.5	2.5	1.9	3.4	1.2
GRD 4	P	19.3	19.8	14.7*	22.2	19.5	19.2	19.3	20.4	18.8	21.4	18.6
	SE	1.2	1.9	2.5	3.1	1.8	1.7	1.9	3.3	2.2	3.5	1.4
AGE 13	P	65.4	54.1*	62.5	72.1*	71.9	66.7	64.2	65.9	71.8	76.6*	60.4*
	SE	2.1	4.1	4.9	3.3	3.7	2.0	2.7	3.1	3.5	4.7	3.3
GRD 8	P	72.9	64.2	68.0	81.4*	76.2	75.6	70.2	72.6	78.8	81.6	68.2
	SE	2.3	5.4	5.7	2.7	3.9	2.3	2.9	3.1	3.8	5.6	4.2
AGE 17	P	76.3	72.6	76.1	81.5*	72.3	77.2	75.4	70.3*	76.7	81.2	77.8
	SE	1.3	3.7	2.1	1.1	3.5	1.6	1.7	2.9	2.1	2.3	2.0
GRD 11	P	80.0	80.5	79.0	84.4*	74.0	82.6	77.7	73.2*	83.4	84.9	81.8
	SE	1.4	2.9	3.1	1.4	3.6	1.8	2.0	3.0	2.4	3.8	2.1

A. Which of the following is thirty-seven thousandths?

● 0.037
○ 0.37
○ 37.
○ 37000

○ I don't know.

B. Which of the following is one and twenty-four hundredths?

○ 1.024
● 1.24
○ 2401
○ 12400

○ I don't know.

Release #: RA14721

NAEP #: 5-A14721-919-2

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 13
1977-78 Package-Exercise: 08-12

Timing: (in seconds)
Exercise Total Time 49

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
PART A												
AGE 13	P	64.7	54.2*	61.6	68.8	73.2*	63.1	66.4	58.7	72.2*	71.2	63.1
	SE	1.8	4.9	3.0	2.8	3.5	1.9	2.3	3.6	4.0	4.5	2.8
GRD 8	P	74.1	65.9	69.9	77.9	80.8*	74.2	74.0	67.8	78.6	82.5	73.3
	SE	1.7	5.8	3.6	2.6	2.6	1.9	2.4	3.5	3.2	6.0	2.8
PART B												
AGE 13	P	63.3	53.9*	58.7	67.2	72.8*	61.9	64.9	57.7	71.6*	70.0	61.2
	SE	1.7	5.1	3.3	2.2	2.9	1.9	2.3	3.7	3.9	4.2	2.8
GRD 8	P	73.4	66.9	67.8	77.6	79.4*	73.4	73.3	66.3	[illegible]	81.0	72.7
	SE	1.8	5.5	4.7	1.9	2.1	2.1	2.5	3.9	3.3	5.6	3.0

Write the following improper fractions as mixed numerals.

A. $\frac{7}{3}$ = ______________________

B. $\frac{14}{4}$ = ______________________

A14721-2
PARTS A&B

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 2 1/3

12 = 1 4/3

20 = OTHER

21 = 3/7

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 3 1/2 OR 3 2/4

20 = OTHER

21 = 7/2

22 = 4/14

39 = I DON'T KNOW.

Release #: [illegible]2

NAEP #: 5-A20232-919-23

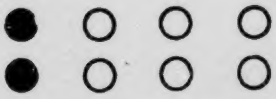
1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture

Overlap: 13 17
1977-78 Package-Exercise: 02-33 07-35

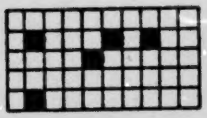
Timing: (in seconds)
Exercise Total Time 72 67

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A												
AGE 13	P	28.0	22.2*	25.4	28.9	34.8	29.7	26.3	24.9	31.5	31.3	27.2
	SE	1.6	2.2	1.6	2.6	4.7	2.0	2.1	2.2	2.2	7.2	2.6
GRD 8	P	33.6	28.4*	31.1	34.4	39.3	34.6	32.7	30.1	35.5	42.2	32.5
	SE	2.3	2.3	1.6	3.0	5.0	2.4	2.6	2.2	2.1	9.7	3.1
AGE 17	P	52.5	44.7*	54.8	54.6	54.2	54.7*	50.5*	49.1	58.3*	56.9	50.4
	SE	1.2	2.5	2.6	1.6	3.3	1.7	1.4	2.9	3.3	3.8	1.5
GRD 11	P	54.5	47.2*	58.2	56.9	53.4	57.5	51.8*	53.7	58.7	51.7	53.0
	SE	1.4	3.4	2.8	2.1	3.2	2.0	1.6	2.9	2.8	5.8	1.9
PART B												
AGE 13	P	18.1	13.1*	16.0	18.3	25.2*	19.7	16.5	14.4	20.8	22.4	17.8
	SE	1.4	2.5	2.0	2.0	3.5	1.6	1.7	1.8	2.3	8.2	2.2
GRD 8	P	22.0	16.2*	20.3	20.2	29.6*	23.8	20.2	18.6	23.6	27.8	21.5
	SE	1.7	3.1	2.5	2.2	4.0	1.9	2.2	1.9	2.4	12.0	2.7
AGE 17	P	38.0	29.5*	37.8	41.7	40.7	43.4*	32.8*	36.0	44.5*	37.6	35.5
	SE	1.5	3.8	3.3	2.0	3.3	2.2	1.9	3.4	2.9	5.2	1.8
GRD 11	P	39.5	30.4*	40.8	42.6	42.0	46.1*	33.8*	39.7	46.5*	37.1	36.3
	SE	1.9	4.8	3.6	2.6	4.6	2.6	2.2	4.1	3.4	7.8	2.1
PART C												
AGE 13	P	66.4	56.9*	66.1	68.9	73.1*	71.2*	61.4*	58.9*	77.5*	66.5	64.4
	SE	1.6	3.3	3.0	2.3	3.5	1.9	2.0	3.5	2.6	5.9	2.6
GRD 8	P	73.9	66.5*	73.4	76.8	77.4	79.3*	68.8*	65.7*	82.0*	76.4	72.6
	SE	1.3	3.3	2.3	1.9	2.6	1.7	2.1	3.5	1.9	5.9	2.2
AGE 17	P	83.1	78.8*	82.6	86.8*	82.5	86.3*	80.1*	80.6	87.1	85.9	81.8
	SE	1.2	2.2	2.4	1.5	3.5	1.6	1.4	3.0	2.2	2.3	2.2
GRD 11	P	85.7	82.5	86.1	88.3	84.3	89.1*	82.7*	84.0	87.7	86.0	85.3
	SE	1.1	3.0	1.8	1.9	2.8	1.2	1.7	3.2	2.6	3.8	1.7



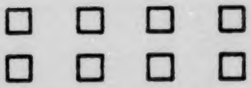
A. What percent of the circles is shaded?

ANSWER ________



B. What percent of the rectangle is shaded?

ANSWER ________



C. Shade 25% of the squares.

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE
11 = 25% OR 25
20 = OTHER
21 = 2% OR 2
22 = 33 1/3%, 33%, 2/6 OR 1/3
23 = 4% OR 4
24 = .25% OR 1/4%
25 = 1/4, 2/8 OR .25 WITHOUT PERCENT SIGN
39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE
11 = 10% OR 10
20 = OTHER
21 = 5% OR 5
22 = 1/5
23 = 50%, .5 OR 5/10
24 = .1%, .10% OR 1/10%
25 = 1/10, 5/50 OR .1 WITHOUT PERCENT SIGN
39 = I DON'T KNOW.

SCORING GUIDE: PART C

Categories are listed below.

PART C:

00 = NO RESPONSE
11 = ANY TWO SQUARES SHADED
12 = ONE-FOURTH OF EVERY SQUARE SHADED OR SOME EQUIVALENT SCHEME
20 = OTHER
21 = SHADED 5 SQUARES
22 = SHADED 4 SQUARES
39 = I DON'T KNOW.

Release #: RA20332

NAEP #: 5-A20332-919-2

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 13
1977-78 Package-Exercise: 03-22

Timing: (in seconds)
Exercise Total Time 30

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 13	P	68.6	60.0*	67.8	73.0	72.7	71.7*	65.4*	62.3*	74.3*	74.6*	67.9
	SE	1.5	2.9	3.4	2.6	2.6	1.9	1.6	3.2	3.1	1.7	2.0
GRD 8	P	76.7	71.0*	74.2	80.5	79.6	81.1*	72.7*	71.7*	78.6	83.4	76.8
	SE	1.4	2.6	3.3	2.3	2.5	1.5	1.9	2.5	3.1	4.3	1.9

If 37 percent of the U.S. population is under 20 years of age, what percent of the population is 20 years of age or older?

○ 37%

● 63%

○ 67%

○ 137%

○ I don't know.

Release #: 0A21632

NAEP #: 5-A21632-919-2

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

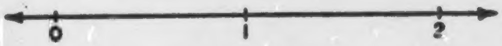
Exercise Type: Open Ended
Stimulus Type: Text/Tape/Graph

Overlap: 13
1977-78 Package-Exercise: 03-04

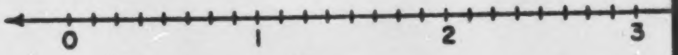
Timing: (in seconds)
Exercise Total Time 36

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 13	P	58.2	45.1*	57.8	65.4*	63.2*	60.2	56.2	55.1	62.8	68.2*	55.6
	SE	1.7	3.3	2.4	4.2	2.4	2.3	1.0	4.8	2.5	1.7	2.2
GRD 8	P	63.5	50.0*	62.1	72.1*	66.9	66.7	60.5	60.7	56.3	73.3	61.2
	SE	1.7	3.1	2.3	4.4	2.5	2.2	2.0	4.5	2.8	5.1	2.3
PART B												
AGE 13	P	43.0	30.6*	43.3	49.0	47.9*	49.6*	36.1*	41.3	52.0*	56.4	36.7*
	SE	1.7	3.4	2.8	4.0	2.3	2.3	1.9	4.3	3.0	7.7	1.9
GRD 8	P	50.9	38.0*	52.5	56.8	53.8	60.7*	41.8*	51.7	59.8*	68.0*	42.5*
	SE	2.0	3.3	4.0	5.0	2.8	2.4	2.4	4.0	4.1	6.1	2.8

A. Mark an X on the number line where $\frac{1}{2}$ should be.



B. Mark an X on the number line where $1\frac{3}{4}$ should be.



A21632-2
PARTS A&B

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = X OR OTHER MARK ANYWHERE IN BETWEEN 1/4 AND 3/4

20 = OTHER

21 = X OR OTHER MARK IN BETWEEN 0 AND 1 OTHER THAN CATEGORY 11

22 = X OR OTHER MARK IN BETWEEN 1 1/4 AND 1 3/4

23 = X OR OTHER MARK IS AT 1

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = X OR OTHER MARK ANYWHERE IN BETWEEN 1 5/8 AND 1 7/8

20 = OTHER

21 = 1 3/8

22 = 1 5/8

23 = 1 7/8

24 = 6/8 OR X OR OTHER MARK IN BETWEEN 5/8 AND 7/8

25 = 1 4/8 OR X OR OTHER MARK IN BETWEEN 1 3/8 AND 1 5/8

39 = I DON'T KNOW.

Release #: RA22321

NAEP #: 5-A22321-919-1

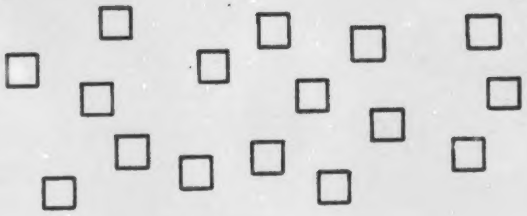
1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture

Overlap: 9
1977-78 Package-Exercise: 03-13

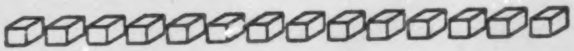
Timing: (in seconds)
Exercise Total Time 98

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 9	P	93.0	90.0*	92.2	[illegible]	95.9*	91.4*	94.6*	91.7	94.5	90.4	93.4
	SE	0.6	1.5	0.9	1.1	1.1	1.0	0.8	1.4	1.1	2.0	0.8
GRD 4	P	95.2	94.1	94.1	96.0	96.2	94.2	96.1	94.2	96.2	94.1	95.3
	SE	0.6	1.7	1.1	0.8	1.3	1.0	0.7	1.3	1.1	2.0	0.8
PART B												
AGE 9	P	80.9	77.0	77.9	80.9	87.6*	79.3	82.4	80.0	82.7	73.8	81.8
	SE	1.0	3.1	2.2	1.3	1.5	1.3	1.7	1.9	3.3	6.5	1.2
GRD 4	P	85.4	83.6	80.8*	85.7	90.5*	84.8	85.8	80.1	84.9	85.5	86.1
	SE	0.9	2.2	1.7	1.5	1.9	1.4	1.5	1.8	2.3	3.9	1.3
PART C												
AGE 9	P	82.4	79.7	77.2*	85.3*	86.7*	84.6	80.3	81.3	84.0	83.6	81.9
	SE	1.0	2.5	2.6	1.4	1.4	1.4	1.5	2.1	2.5	4.1	1.4
GRD 4	P	86.9	[illegible]	81.2*	90.3*	90.7*	88.4	85.5	84.7	87.7	88.1	87.2
	SE	0.9	1.9	2.7	1.5	1.2	1.2	1.4	1.9	2.2	4.1	1.7



A. Count the squares. How many squares are there?

ANSWER ____________

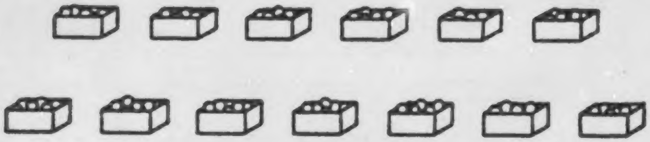


B. Here are 14 boxes of shoes. Each box has 2 shoes in it. Count by twos to find how many shoes are in all the boxes.

○ 14
○ 26
● 28
○ 30
○ 140

○ I don't know.

(Continued)



C. Here are 13 boxes of marbles. Each box has 10 marbles in it. Count by tens to find how many marbles are in all the boxes.

○ 10
○ 13
○ 39
○ 120
● 130
○ 140

○ I don't know.

SCORING GUIDE: PART A

Categories are listed below.

PART A:

00 = NO RESPONSE
11 = 16
20 = OTHER
21 = 14
22 = 15
23 = 17
24 = 18
39 = I DON'T KNOW.

Release #: NA22045

NAEP #: 5-A22045-919-1

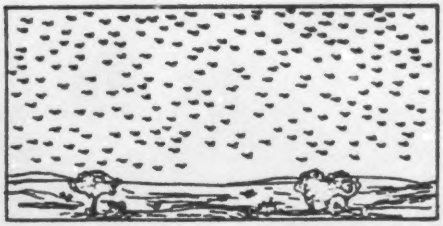
1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2F. Estimating Computations and Measurements

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap: 9
1977-78 Package-Exercise: 06-07

Timing: (in seconds)
Exercise Total Time 29

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 9	P	73.4	72.7	74.0	75.5	70.1	74.2	72.6	72.6	76.3	71.0	72.9
	SE	1.3	2.7	2.9	1.9	3.5	1.6	1.7	2.9	3.3	4.7	1.8
GRD 4	P	77.2	76.2	76.7	81.0	73.7	78.8	75.8	76.2	78.2	73.3	77.8
	SE	1.2	1.7	3.1	1.9	3.1	1.4	1.7	1.9	3.6	3.5	1.5



This is a picture of birds flying south for the winter. About how many birds are in the picture? You will not have time to count them.

○ 20

● 200

○ 2000

○ I don't know.

Release #: RA23332

NAEP #: 5-A23332-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	06-18	05-37
Timing: (in seconds) Exercise Total Time	35	30

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 13	P	57.7	46.7*	57.6	60.6	64.3	53.1*	60.3*	55.4	66.4*	63.7	53.2
	SE	2.0	4.1	4.5	3.5	3.8	2.3	2.4	3.7	3.9	7.0	3.3
GRD 8	P	63.5	52.6*	64.0	66.8	68.3	62.0	64.8	58.8	70.7	74.4	59.9
	SE	2.2	4.8	4.8	4.3	3.3	2.6	2.5	4.1	3.9	7.9	3.3
AGE 17	P	71.3	66.2	71.3	71.2	74.6	70.2	71.9	74.3	72.9	69.0	68.7
	SE	1.7	3.1	4.0	2.7	3.6	1.8	2.2	3.4	3.4	8.7	2.4
GRD 11	P	73.9	67.9*	75.5	74.2	76.9	73.4	74.4	78.9	74.8	72.5	71.2
	SE	1.9	2.8	4.3	3.1	4.6	2.0	2.5	3.1	4.1	8.8	2.7

What is always true about any prime number?

○ It is less than 1000.

○ It is divisible by another prime number.

● It is divisible by only itself and 1.

○ It is a factor of 1.

○ I don't know.

Release #: RA23832

NAEP #: 5-A23832-919-123

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

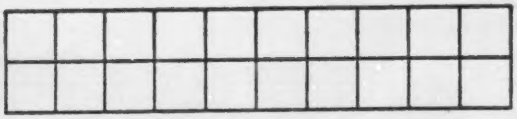
Exercise Type: Open Ended
Stimulus Type: Text/Tape/Graph/Picture

Overlap:	9	13	17
1977-78 Package-Exercise:	01-06	06-17	01-03

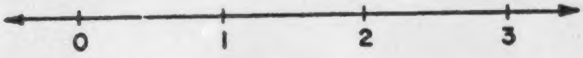
Timing: (in seconds)

	9	13	17
Exercise Total Time	96	76	65

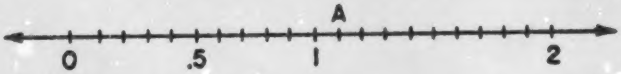
			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	PABC	MCTY	SMPL
PART A												
AGE 9	P	11.4	8.9*	10.5	13.2	12.6	13.7*	9.1*	10.6	13.5	12.8	10.5
	SE	0.9	1.4	1.8	1.9	1.3	1.2	1.2	1.2	2.3	1.8	1.2
GRD 4	P	12.2	8.5*	12.1	14.3	13.9	16.1*	8.8*	10.8	13.8	15.5	11.6
	SE	1.0	1.4	2.4	2.1	1.4	1.6	1.2	1.3	2.2	2.3	1.5
AGE 13	P	49.4	37.2*	49.5	54.4	54.5	53.5*	45.3*	40.8*	59.5*	48.7	48.7
	SE	2.2	5.0	3.8	4.2	4.0	2.5	2.6	3.2	4.3	8.5	3.6
GRD 8	P	55.0	43.6*	56.6	59.5	58.2	60.3*	50.3*	45.4*	61.6	54.6	56.2
	SE	2.3	6.4	4.9	4.0	3.2	2.7	2.8	3.2	4.5	7.6	4.0
AGE 17	P	75.9	68.0*	75.2	81.2*	77.0	79.3*	72.7*	72.0	82.4*	77.7	75.1
	SE	1.5	4.0	2.6	2.3	3.5	1.8	2.0	3.4	2.7	4.1	1.9
GRD 11	P	79.6	72.9	78.9	83.7*	80.4	83.0*	76.8	76.3	83.7	84.1	79.0
	SE	1.5	3.9	2.6	1.9	4.1	2.0	2.0	3.5	2.7	3.9	2.0
PART B												
AGE 9	P	32.8	26.3*	27.2*	36.7*	40.3*	35.1	30.6	22.6*	36.1	36.1	35.5
	SE	1.3	3.4	2.3	1.9	2.6	2.0	1.5	2.2	2.7	4.2	2.0
GRD 4	P	37.2	30.6	31.0*	42.2	43.2*	40.6	34.1*	24.8*	42.4	38.8	40.3
	SE	1.5	4.3	2.7	2.7	2.5	2.5	1.7	2.9	2.8	5.8	2.3
AGE 13	P	78.5	67.9*	73.6	86.6*	83.6*	78.8	78.2	70.6*	84.8*	81.7	78.7
	SE	1.3	3.6	3.0	1.7	2.2	1.5	1.6	3.4	2.2	4.7	2.0
GRD 8	P	83.1	76.4	79.5	88.1*	86.6	85.0	81.5	77.0	86.7	87.2	83.6
	SE	1.3	4.6	2.1	1.7	2.2	1.5	1.6	3.5	2.1	4.6	2.1
AGE 17	P	88.2	84.4	86.2	91.5*	89.6	89.4	87.0	84.5*	91.7*	92.3	88.2
	SE	1.1	2.2	2.8	1.1	2.1	1.4	1.2	2.1	1.6	3.4	1.7
GRD 11	P	90.0	85.9	87.1	92.6*	93.7	91.2	89.0	85.5*	92.7	94.9	90.6
	SE	1.0	2.6	2.5	1.1	2.1	1.3	1.2	2.0	1.9	3.0	1.4
PART C												
AGE 9	P	46.4	42.7	41.3	50.7*	49.7	44.5	48.2	40.2*	53.1*	46.4	46.2
	SE	1.3	2.3	3.0	2.2	3.4	2.0	1.8	3.0	2.9	4.2	1.9
GRD 4	P	50.8	48.1	44.3	56.9*	51.0	49.5	51.3	43.1*	63.3*	51.9	49.1
	SE	1.6	3.1	4.1	2.5	3.6	2.3	2.1	3.5	3.6	5.0	2.5
AGE 13	P	80.0	73.2*	77.3	83.5	84.6*	78.1	81.8	75.5	83.5	85.5	79.4
	SE	1.3	3.3	3.2	2.0	2.5	2.0	1.6	3.5	2.0	4.8	2.1
GRD 8	P	85.1	79.3	83.7	87.0	88.8	84.6	85.4	80.2	86.6	89.9	85.8
	SE	1.2	3.4	2.2	1.8	2.3	1.8	1.5	3.1	2.2	2.1	2.0
AGE 17	P	86.6	82.5*	89.4*	88.7	84.2	87.9	85.4	86.8	88.6	90.1*	85.0
	SE	0.9	1.2	1.5	1.6	2.5	1.2	1.2	1.9	1.6	1.2	1.6
GRD 11	P	89.2	84.7*	91.3	90.8	88.1	90.8	87.9	87.4	91.6	92.9	88.5
		[illegible]	[illegible]	1.5	1.8	[illegible]	1.2	1.2	1.9	2.0	2.4	1.3



A. Shade .1 of the above rectangle.



B. Mark an X on the number line where 1.5 should be.



C. What is the number at point A?

○ .11
● 1.1
○ 1.5
○ 11

○ I don't know.

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = SHADED ANY TWO SQUARES

12 = SHADED SAME AREA AS ANY TWO SQUARES SUCH AS 1/2 OF FOUR SQUARES

20 = OTHER

21 = SHADED ONE SQUARE OR AN EQUAL AREA

22 = SHADED 10 SQUARES OR AN EQUAL AREA

23 = SHADED 5 SQUARES OR AN EQUAL AREA

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = X OR OTHER MARK BETWEEN 1 1/4 AND 1 3/4, INCLUDING 1 1/4 AND 1 3/4

20 = OTHER

21 = X OR OTHER MARK BEYOND 3 NEAR THE RIGHT END OF THE NUMBER LINE

22 = X OR OTHER MARK BETWEEN 1 AND 2 OTHER THAN CATEGORY 11

23 = X OR OTHER MARK BETWEEN 0 AND 1, INCLUDING 0 AND 1

24 = X OR OTHER MARK BETWEEN 2 AND 3, INCLUDING 2 AND 3

39 = I DON'T KNOW.

Release #: RA24911

NAEP #: 5-A24911-919-1

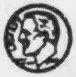
1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 1A. Recall and Recognition

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap: 9
1977-78 Package-Exercise: 05-14

Timing: (in seconds)
Exercise Total Time 28

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
PART A												
AGE 9	P	85.7	81.2*	84.2	86.2	91.0*	86.8	84.6	88.5*	89.2*	84.4	83.3*
	SE	1.0	2.7	1.7	1.8	1.7	1.2	1.2	1.5	1.5	1.8	1.6
GRD 4	P	88.6	82.5*	87.0	89.1	94.3*	89.2	88.0	90.6	90.1	90.9	86.5
	SE	1.1	2.8	1.9	1.7	1.8	1.5	1.3	1.5	2.1	1.2	1.8
PART B												
AGE 9	P	86.1	80.4*	85.1	86.5	91.8*	87.6*	84.6*	87.7	90.7*	84.9	83.4*
	SE	1.0	2.6	1.6	1.7	2.0	1.0	1.3	1.5	1.5	1.7	1.7
GRD 4	P	88.8	82.1*	88.0	89.3	94.5*	90.1	87.6	90.3	91.5	90.9	86.5
	SE	1.1	3.1	1.5	1.7	1.9	1.2	1.4	1.5	1.7	1.2	1.9



A. This is a picture of a coin. What is the coin called?

○ penny
○ nickel
● dime
○ quarter

○ I don't know.

B. How much is the coin worth?

○ 1 cent
○ 5 cents
● 10 cents
○ 25 cents

○ I don't know.

Release #: NA30321

NAEP #: 5-A30321-919-123

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	9 02-20	13 04-05	17 08-03
Timing: (in seconds) Exercise Total Time	72	57	57

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
PART A												
AGE 9	P	90.1	89.4	90.8	90.5	89.4	89.4	90.7	89.8	90.2	93.0	89.5
	SE	1.0	2.5	1.4	1.2	2.8	1.5	1.1	1.9	2.2	2.5	1.3
GRD 4	P	90.6	90.4	91.3	90.4	90.3	90.5	90.7	91.9	90.0	91.1	90.3
	SE	1.2	2.3	1.5	1.8	3.1	1.6	1.2	1.6	2.3	3.1	1.7
AGE 13	P	97.8	97.5	97.6	97.8	98.5	97.8	97.8	96.9	98.3	97.7	98.1
	SE	0.3	0.7	0.6	0.8	0.5	0.5	0.5	0.8	0.6	1.1	0.5
GRD 8	P	98.4	98.6	97.4	98.5	99.0	98.3	98.4	98.6	98.0	97.3	98.6
	SE	0.3	0.6	0.8	0.6	0.3	0.5	0.5	0.6	0.6	1.3	0.5
AGE 17	P	98.2	97.1	97.9	98.3	99.1*	97.7	98.6	97.7	98.7	98.7	98.1
	SE	0.3	0.6	0.7	0.7	0.3	0.5	0.4	0.7	0.5	0.9	0.5
GRD 11	P	98.3	97.6	97.6	98.8	98.8	97.6	98.9	97.0	99.0	99.2	98.4
	SE	0.3	0.6	0.9	0.5	0.8	0.6	0.4	1.0	0.4	0.7	0.4
PART B												
AGE 9	P	76.2	73.9	78.9	79.3	75.1	71.3*	81.2*	69.3*	78.5	81.7*	76.9
	SE	1.5	3.5	1.9	2.0	4.0	1.6	1.6	2.0	2.8	2.1	2.6
GRD 4	P	81.9	79.1	87.0*	85.3	77.4	79.3	84.3*	76.5*	83.0	86.9	82.6
	SE	2.0	3.6	2.0	2.6	5.1	2.4	1.9	2.3	2.5	2.8	3.7
AGE 13	P	95.1	91.5*	95.6	97.2*	95.4	94.3	95.9	95.3	95.3	95.8	94.7
	SE	0.4	1.0	0.7	0.5	1.0	0.7	0.6	0.8	1.1	2.4	0.6
GRD 8	P	96.8	96.2	96.5	97.7	96.6	96.1	97.5	96.7	96.2	96.3	97.2
	SE	0.5	1.0	0.9	0.8	1.1	0.7	0.6	0.9	1.2	2.6	0.4
AGE 17	P	97.0	96.2	95.2	98.5*	97.2	96.9	97.0	95.4	98.0	98.0	97.0
	SE	0.5	1.4	1.0	0.5	1.0	0.7	0.6	1.1	0.8	1.4	0.8
GRD 11	P	97.9	98.1	96.3	98.6	98.6	98.5	97.5	96.9	98.4	98.7	98.1
	SE	0.4	0.6	1.0	0.6	0.7	0.5	0.6	1.0	0.9	1.3	0.4
PART C												
AGE 9	P	51.2	43.8	50.0	54.5	55.9*	47.4*	55.2*	45.5*	54.4	49.2	52.6
	SE	1.6	5.1	3.0	2.5	1.8	2.0	2.0	3.3	3.2	5.5	2.5
GRD 4	P	59.0	51.0	59.2	64.8*	60.8	57.0	60.9	52.3*	60.7	58.9	60.9
	SE	1.9	6.4	2.1	2.8	2.6	2.5	2.3	3.8	3.9	4.0	2.7
AGE 13	P	85.0	81.6	83.9	87.4	86.7	83.5	86.5	84.4	85.9	84.2	85.0
	SE	1.0	3.1	2.0	1.2	1.8	1.0	1.5	1.6	2.1	3.2	1.3
GRD 8	P	88.0	87.8	85.3	90.0	88.9	86.9	89.1	85.6	87.2	86.7	90.1
	SE	1.1	2.9	2.5	1.4	1.8	1.2	1.6	1.7	2.3	3.3	1.5
AGE 17	P	90.1	90.4	87.5*	92.2*	89.6	88.8*	91.5*	89.8	91.5	92.4	89.1
	SE	0.9	2.8	1.3	1.0	1.7	1.2	0.8	1.9	1.5	2.3	1.1
GRD 11	P	91.0	91.0	89.0	93.5	89.5	90.0	92.0	90.0	92.6	92.3	90.5
	SE	1.0	2.5	2.3	1.4	2.2	1.4	1.0	2.4	2.2	2.2	1.3

Find the sums.

A. $\begin{array}{r} 21 \\ +\,54 \\ \hline \end{array}$

ANSWER ________

B. $\begin{array}{r} 37 \\ +\,18 \\ \hline \end{array}$

ANSWER ________

C. $\begin{array}{r} 4285 \\ 3273 \\ +\,5125 \\ \hline \end{array}$

ANSWER ________

SCORING GUIDE: PARTS A, B & C

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 75

20 = OTHER

21 = +33 OR -33

22 = 57

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 55

20 = OTHER

21 = 19

22 = 45

23 = 415

39 = I DON'T KNOW.

PART C:

00 = NO RESPONSE

11 = 12683

20 = OTHER

21 = 12,573, 12,583, 12,673 OR OTHER OBVIOUS CARRYING ERRORS EXCEPT CATEGORIES 22 AND 23

22 = 1251713

23 = 13683

39 = I DON'T KNOW.

```
Release #:        RA30321K

NAEP #:           5-A30321K919-1

1977-78 Content Area:    A. Numbers and Numeration
1977-78 Objective:      2A. Computations or Counting


Exercise Type:          Open Ended
Stimulus Type:          Text/Tape/Calculator

Overlap:                      9
1977-78 Package-Exercise:   07-01

Timing: (in seconds)
   Exercise Total Time             74

                  |          REGION            |     SEX     |  COMMUNITY SIZE (DOC)
                  |                            |             |
             NAT  |  SE    WEST  CENT    NE    | MALE   FEM  |  BC   PABC  MCTY  SMPL

  PART A

AGE  9 P     89.0    83.4* 87.3  92.3* 92.8*   86.9* 91.2*   89.8  92.3* 92.0  86.7*
       SE     0.9     2.3   1.6   1.5   1.3     1.2   1.9     2.9   1.2   1.9   1.5
GRD  4 P     92.8    88.9* 91.3  96.0* 94.0    92.2  93.3    94.8  94.1  96.1  90.7*
       SE     0.8     1.7   2.1   0.9   1.3     1.1   1.1     1.3   1.2   1.9   1.3

  PART B

AGE  9 P     83.2    75.1* 82.4  86.7* 88.0*   80.8* 85.6*   84.3  87.1  87.6  80.2*
       SE     1.3     3.5   1.7   2.0   1.7     1.7   1.5     3.1   2.3   2.5   1.8
GRD  4 P     88.5    82.1* 88.6  93.1* 89.2    87.2  89.7    92.2* 90.4  93.4  85.0*
       SE     1.2     3.2   1.7   1.6   1.9     1.7   1.4     1.8   2.2   2.3   1.9

  PART C

AGE  9 P     49.5    39.3* 49.3  50.5  59.2*   45.2* 53.7*   53.2  48.8  42.4  49.2
       SE     1.5     2.7   3.2   3.0   2.5     1.8   2.2     3.4   3.8   6.7   2.2
GRD  4 P     57.5    47.4* 58.2  60.5  63.2*   53.5* 60.9*   62.4  57.2  49.1  56.6
       SE     1.6     3.0   3.3   3.3   2.8     2.0   2.4     3.5   4.2   5.1   2.3
```

Find the sums.

A.

$$\begin{array}{r} 21 \\ +\ 54 \\ \hline \end{array}$$

ANSWER ________

B.

$$\begin{array}{r} 37 \\ +\ 18 \\ \hline \end{array}$$

ANSWER ________

C.

$$\begin{array}{r} 4286 \\ 3273 \\ +\ 5125 \\ \hline \end{array}$$

ANSWER ________

A30321K1
PARTS A,B&C

SCORING GUIDE: PARTS A, B & C

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 75

20 = OTHER

21 = +33 OR -33

22 = 57

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 55

20 = OTHER

21 = 19

22 = 45

23 = 415

39 = I DON'T KNOW.

PART C:

00 = NO RESPONSE

11 = 12683

20 = OTHER

21 = 12,573, 12,583, 12,673 OR OTHER OBVIOUS CARRYING ERRORS EXCEPT CATEGORIES 22 AND 23

22 = 1251713

23 = 13683

39 = I DON'T KNOW.

Release #: NA30631

NAEP #: 5-A30631-919-123

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3A. Translation

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	9 02-26	13 06-26	17 10-06
Timing: (in seconds) Exercise Total Time	103	75	55

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
PART A												
AGE 9	P	66.4	65.9	59.5*	70.2	69.1	64.6	68.3	61.9	69.2	74.3*	65.3
	SE	1.9	2.9	3.9	2.7	5.5	2.5	2.0	3.2	2.7	2.5	3.3
GRD 4	P	71.5	71.2	65.6	75.5	73.3	70.5	72.5	69.9	75.9	78.3	68.3
	SE	2.6	3.3	5.7	3.1	6.8	3.5	2.4	2.4	3.1	3.8	4.7
AGE 13	P	92.0	89.0*	88.0*	95.2*	95.1*	90.5*	93.6*	89.0*	95.7*	91.9	91.7
	SE	0.6	1.5	1.1	1.2	1.2	1.1	0.6	1.4	1.0	2.6	0.9
GRD 8	P	94.1	90.4*	91.0*	97.0*	96.6*	92.9	95.1	91.5	97.2*	96.4	93.1
	SE	0.6	1.9	1.4	0.8	0.9	1.1	0.7	1.7	0.9	2.0	1.1
AGE 17	P	96.3	96.6	93.7*	97.2	97.9*	95.7	96.9	95.0	95.1	99.2*	97.1
	SE	0.5	0.9	1.5	0.7	0.7	0.9	0.8	1.6	1.2	0.7	0.5
GRD 11	P	97.3	99.1*	94.4	98.2	97.9	97.1	97.5	96.4	96.2	100.0*	97.8
	SE	0.6	0.5	1.9	0.7	0.8	0.8	0.9	2.0	1.4	0.0	0.5
PART B												
AGE 9	P	50.1	47.5	47.3	54.3	50.6	47.0*	53.4*	48.4	49.9	58.9*	49.3
	SE	1.4	2.5	2.9	3.0	2.3	1.7	1.7	2.6	2.8	3.1	1.9
GRD 4	P	55.8	54.8	52.6	61.1	55.0	52.9	58.4*	54.2	56.0	65.7*	54.3
	SE	1.7	3.8	3.4	3.5	2.5	2.4	1.6	2.6	2.8	3.1	2.7
AGE 13	P	84.0	79.5*	82.1	86.8	86.6	81.2*	86.8*	85.1	85.7	86.6	82.1
	SE	0.9	2.3	1.6	1.9	1.8	1.4	1.0	2.0	2.0	3.0	1.5
GRD 8	P	86.8	84.4	85.4	88.8	88.1	85.1	88.4	87.8	86.2	90.6	86.1
	SE	1.0	2.6	1.7	2.0	2.0	1.7	1.1	2.1	1.8	3.5	1.8
AGE 17	P	89.9	88.7	87.8	92.3	90.2	89.8	90.0	87.1	92.2	90.0	90.0
	SE	0.9	1.3	2.5	1.5	1.5	1.1	1.4	2.6	1.3	2.5	1.3
GRD 11	P	92.4	92.2	88.8	94.9	93.9	93.3	91.6	90.3	93.9	96.7	91.9
	SE	0.9	1.6	2.5	1.1	1.6	1.1	1.3	2.5	1.5	2.2	1.3

A. Paul has 21 stamps in his collection. He buys 54 more. Which number sentence tells how many he has after he buys them?

- ○ 54 - 21 = □
- ● 21 + 54 = □
- ○ 2(21 + 54) = □
- ○ 54 × 21 = □

- ○ I don't know.

B. Mike took 15 cents to the store. He saw a pen that costs 23 cents. Which number sentence tells you how much more he needs to buy the pen?

- ○ 23 + □ = 15
- ○ 15 + 23 = □
- ● 15 + □ = 23
- ○ □ + 23 = 15

- ○ I don't know.

Release #: RA31181

NAEP #: 5-A31181-919-12

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	9	13
1977-78 Package-Exercise:	01-10	02-09
Timing: (in seconds)		
Exercise Total Time	35	30

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MDCT	SMPL
AGE 9	P	81.8	75.6*	77.6	86.2*	87.0*	80.5	83.2	79.5	86.5*	80.3	81.1
	SE	1.2	2.0	3.2	2.0	1.9	1.7	1.3	2.5	2.6	1.8	1.5
GRD 4	P	85.4	80.9*	81.1	89.8*	88.5	85.2	85.5	83.9	89.8	85.5	84.0
	SE	1.1	1.9	3.6	1.7	2.0	1.8	1.5	2.4	2.5	2.6	1.7
AGE 13	P	96.2	95.6	95.9	95.3	98.5*	96.1	96.4	94.4	97.3	97.3	96.4
	SE	0.5	0.6	1.5	1.0	0.5	0.7	0.6	1.0	0.9	1.5	0.7
GRD 8	P	97.3	96.6	97.0	96.9	98.4	96.8	97.7	95.6	97.6	96.8	98.0
	SE	0.5	1.2	1.1	0.9	0.6	0.8	0.5	0.9	1.0	2.0	0.6

Paul has 21 stamps in his collection. He buys 54 more from a stamp dealer.

How many does he have after he buys them?

ANSWER ____________________

A31181-12

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 75

20 = OTHER

21 = +33, -33 OR ATTEMPTED 54 - 21 OR 21 - 54

22 = 54 + 21

39 = I DON'T KNOW.

Release #: RA31241

NAEP #: 5-A31241-919-1

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 03-35

Timing: (in seconds)
Exercise Total Time 58

			NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
				SE	WEST	CENT	NE	MALE	FEM	BC	FADC	MCTY	SMPL
AGE	9	P	79.4	74.5	79.5	84.1*	78.1	77.0*	81.8*	74.9*	84.8*	78.5	79.0
		SE	1.2	3.1	2.8	1.4	3.1	1.7	1.4	2.3	1.6	1.3	2.1
GRD	4	P	83.6	81.1	81.6	90.0*	80.9	82.6	84.5	78.9	85.3	84.7	84.7
		SE	1.1	2.7	1.9	1.7	2.7	1.6	1.3	2.9	1.7	2.4	1.9

Alice collects stamps. She had 45 stamps in her collection. For her birthday her Grandmother sent her 6 stamps, her sister gave her 3 stamps, and her best friend gave her 2 stamps. How many stamps does she now have in her collection?

○ 46

○ 53

● 56

○ 59

○ I don't know.

Release #: RA31341

NAEP #: 5-A31341-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 13/07-18 17/11-13

Timing: (in seconds)
Exercise Total Time 43 38

			NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
				SE	WEST	CENT	NE	MALE	FEM	RC	PARC	MCTY	SBRL
AGE	13	P	54.2	45.8*	48.2*	60.0*	62.4*	51.5	56.9	47.6	62.8*	57.5	53.0
		SE	1.6	2.5	3.4	2.5	3.8	2.0	2.2	3.9	3.2	6.0	2.9
GRD	8	P	62.7	53.6*	57.2	66.0	73.1*	61.8	63.4	55.2	68.8*	70.8	62.0
		SE	1.7	3.0	4.1	2.6	2.7	2.0	2.4	4.5	3.1	7.0	3.0
AGE	17	P	80.5	70.7*	79.1	85.0*	84.4*	84.6*	76.4*	76.7	84.1*	86.5*	79.4
		SE	1.0	3.0	2.1	1.5	1.9	1.2	1.6	3.1	1.8	2.6	1.5
GRD	11	P	83.3	74.6*	81.5	87.9*	85.9	87.0*	80.0*	80.7	85.1	90.7*	82.3
		SE	1.1	3.2	2.7	1.3	1.8	1.3	1.7	2.6	1.7	2.3	1.7

To make a cake, you need $2\frac{1}{4}$ cups of sugar for the frosting and $1\frac{1}{2}$ cups of sugar for the cake. How many cups of sugar are needed for the cake and frosting together?

○ $3\frac{2}{6}$ cups

○ $3\frac{2}{4}$ cups

● $3\frac{3}{4}$ cups

○ $3\frac{2}{2}$ cups

○ I don't know.

Release #: RA31532

NAEP #: S-A31532-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2F. Estimating Computations and Measurements

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 13 04-27 17 09-24

Timing: (in seconds)
Exercise Total Time 35 31

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	DC	PADC	HCTY	SHPL
PART A												
AGE 13	P	23.5	18.2*	21.5	29.7*	23.1	24.3	22.5	23.1	21.0	31.8	23.4
	SE	1.2	2.5	1.6	2.1	3.7	1.5	1.9	2.4	2.2	5.2	1.7
GRD 8	P	26.0	20.2	24.0	33.9*	24.6	27.2	24.8	26.7	23.7	34.7	25.2
	SE	1.4	3.2	1.7	2.1	4.1	2.0	2.2	2.9	3.0	5.3	1.9
AGE 17	P	37.4	32.8	35.6	41.8	36.9	40.5*	34.4*	32.5	37.5	47.3	37.6
	SE	1.7	2.3	3.4	2.9	4.6	2.1	2.3	3.0	3.7	5.2	2.4
GRD 11	P	39.9	39.8	37.1	42.7	38.5	43.8*	36.4*	33.5	39.9	51.6	40.3
	SE	1.7	2.1	3.3	2.9	4.8	2.3	2.4	3.7	3.6	7.6	2.3
PART B												
AGE 13	P	45.3	38.7	39.7*	50.3*	52.1*	49.0*	41.5*	43.0	47.1	55.2*	44.0
	SE	1.5	4.3	3.2	1.8	2.9	2.1	2.3	3.0	3.0	4.2	2.5
GRD 8	P	50.4	45.4	43.9	55.9*	55.8	55.6*	45.5*	50.1	53.7	55.6	47.9
	SE	1.8	4.7	4.2	2.2	3.0	2.4	2.5	3.2	3.7	6.6	3.3
AGE 17	P	56.3	53.5	52.7	62.7*	53.3	59.9*	52.8*	54.6	53.1	62.9*	57.7
	SE	1.3	2.0	2.3	2.1	3.4	1.7	1.7	3.7	2.3	2.8	1.7
GRD 11	P	60.2	60.9	55.8*	66.0*	55.5	64.7*	56.3*	58.7	57.3	66.2	61.6
	SE	1.4	2.1	2.3	2.5	4.0	2.0	1.9	4.2	2.6	4.1	2.0

A. **ESTIMATE** the answer to $\frac{12}{13} + \frac{7}{8}$. You will not have time to solve the problem using paper and pencil.

○ 1
● 2
○ 19
○ 21

○ I don't know.

B. **ESTIMATE** the answer to $5\frac{3}{7} + 6\frac{5}{8}$. You will not have time to solve the problem using paper and pencil.

○ 8
○ 11
● 12
○ 15

○ I don't know.

Release #: RA31621

NAEP #: 5-A31621-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	02-16	07-22
Timing: (in seconds) Exercise Total Time	120	111

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 13	P	38.9	27.4*	39.2	37.0	52.6*	37.3	40.7	30.8*	50.3*	44.8	35.9
	SE	1.8	3.0	4.4	2.8	3.3	2.0	2.4	3.3	3.4	6.3	3.2
GRD 8	P	48.0	36.1*	47.4	47.1	58.7*	46.3	49.6	38.7*	56.3*	61.2	44.9
	SE	2.1	5.5	5.1	3.7	2.4	2.3	2.8	3.9	3.6	6.8	3.8
AGE 17	P	53.7	49.7	49.4	53.3	62.3*	52.5	54.7	52.0	61.8*	59.7	49.2*
	SE	1.6	4.0	3.7	2.3	3.5	2.1	2.0	3.5	2.4	6.8	2.4
GRD 11	P	57.1	54.2	51.7	57.0	65.8*	57.2	57.0	57.7	62.5*	61.7	53.5
	SE	1.8	4.8	4.2	2.3	3.2	2.0	2.3	3.3	2.5	8.0	2.9
PART B												
AGE 13	P	46.3	35.7*	40.5	41.2	61.1*	42.8*	49.9*	36.0*	58.6*	57.7	42.8
	SE	2.0	4.5	4.3	2.6	3.3	2.6	2.2	3.2	2.8	7.2	3.9
GRD 8	P	55.7	45.5	56.1	52.0	67.1*	52.9	58.4	43.5*	66.3*	70.8	52.3
	SE	2.1	5.8	4.0	3.4	2.6	2.8	2.4	3.4	3.0	8.3	4.3
AGE 17	P	60.2	55.0	62.7	55.5	68.8*	59.2	61.2	56.7	63.0	66.8	59.3
	SE	1.7	5.6	2.8	2.6	3.5	2.2	1.9	4.0	2.3	12.6	2.3
GRD 11	P	63.9	60.4	65.2	59.6	72.0*	63.9	63.9	61.6	66.1	72.5	62.5
	SE	1.7	5.6	3.5	2.4	3.4	2.0	2.2	4.1	2.2	9.5	2.8
PART C												
AGE 13	P	62.9	56.7	60.6	61.9	72.9*	60.6	65.3	56.1*	67.2	72.9	62.2
	SE	1.8	3.8	3.8	2.2	3.9	2.5	1.8	2.6	2.7	6.7	2.9
GRD 8	P	70.0	66.2	64.1	69.3	78.8*	69.1	70.9	63.1	73.4	78.7	69.7
	SE	1.7	3.5	4.4	2.4	2.8	2.5	2.0	3.4	3.3	8.4	2.8
AGE 17	P	76.8	74.5	78.5	76.5	77.5	75.8	77.7	75.5	82.1*	83.7	73.5*
	SE	1.3	1.8	2.3	2.5	3.2	1.8	1.4	3.3	2.2	4.8	1.6
GRD 11	P	79.2	76.9	80.6	78.8	80.5	79.1	79.3	80.0	83.6	89.3*	75.2*
	SE	1.3	1.7	3.0	2.4	2.7	1.7	1.4	2.9	2.6	2.4	1.7

Find the sums.

A. $\begin{array}{r} \frac{7}{16} \\ +\ \frac{4}{9} \\ \hline \end{array}$

ANSWER ________

B. $\begin{array}{r} 4\frac{1}{4} \\ +\ 3\frac{2}{5} \\ \hline \end{array}$

ANSWER ________

C. $\begin{array}{r} 2\frac{1}{6} \\ +\ 4\frac{4}{5} \\ \hline \end{array}$

ANSWER ________

A31621-23
PARTS A&B

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 41/45

12 = 123/135, 82/90 OR OTHER EQUIVALENT OF 41/45

20 = OTHER

21 = 11/24

22 = ANY FRACTION WITH DENOMINATOR OF 45 EXCEPT CATEGORIES 11 AND 12

23 = 28/135

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 7 13/20

12 = 153/20 OR OTHER EQUIVALENT OF 7 13/20

20 = OTHER

21 = 7 3/9 OR 7 1/3

22 = 7 13/9

39 = I DON'T KNOW.

A31621-23
PART C

SCORING GUIDE: PART C

Categories are listed below.

PART C:

00 = NO RESPONSE

11 = 7 2/5, 7.4, 6 7/5 OR 7 4/10

12 = 37/5 OR OTHER EQUIVALENT OF 7 2/5 EXCEPT CATEGORY 11

20 = OTHER

21 = 6 7/10

22 = 2 1/5

39 = I DON'T KNOW.

Release #: RA31732

NAEP #: 5-A31732-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	05-13	10-23
Timing: (in seconds)		
Exercise Total Time	41	25

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 13	P	24.1	19.6	20.8	24.9	30.6	22.4	25.7	19.7	30.0	23.0	23.8
	SE	1.8	3.5	3.4	2.5	4.9	2.0	2.0	3.4	3.5	4.4	2.6
GRD 8	P	30.2	25.4	26.3	32.6	34.9	29.4	30.9	25.8	36.3	25.7	30.3
	SE	2.3	4.3	4.3	3.0	6.1	2.8	2.5	4.1	4.1	5.4	3.4
AGE 17	P	41.7	37.1	37.7	42.1	50.5*	43.7	39.9	40.8	44.4	46.2	39.9
	SE	1.7	3.5	3.0	4.0	2.6	2.2	2.2	4.5	3.8	2.8	2.5
GRD 11	P	45.0	42.3	40.1	44.9	54.6*	48.4	42.0*	43.5	47.5	54.4	42.7
	SE	2.1	5.3	3.0	4.1	3.5	2.7	2.2	4.6	4.2	6.4	2.7

Find the least common denominator of $\frac{7}{15}$ and $\frac{4}{9}$.

ANSWER ____________________

A31732-23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 45

20 = OTHER

21 = 135, 63/135, 60/135 OR 63/135 + 60/135

22 = ANY NUMBER DIVISIBLE BY 9 AND 15 EXCEPT CATEGORIES 11 AND 21
SUCH AS 90, 180, 225 OR 270

23 = 15 OR 9

24 = 3

25 = 41/45 OR 123/135

26 = 21/45 AND 20/45 OR 21/45 + 20/45

39 = I DON'T KNOW.

Release #: RA31921

NAEP #: S-A31921-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	13 03-35	17 08-15
Timing: (in seconds) Exercise Total Time	73	73

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
PART A												
AGE 13	P	73.7	70.9	75.1	72.6	76.2	71.9	75.5	77.5	73.8	77.4	70.9*
	SE	1.1	2.4	2.3	1.8	2.4	1.5	1.6	2.4	2.5	4.5	1.3
GRD 8	P	79.1	79.0	80.6	78.2	78.8	78.3	79.8	83.9*	78.3	79.7	77.0
	SE	1.1	1.9	2.8	2.2	2.1	1.7	1.7	2.3	2.5	4.3	1.3
AGE 17	P	89.9	87.9	89.5	92.2*	( ).6	90.4	89.4	91.1	89.5	91.6	89.0
	SE	0.8	1.6	1.8	0.9	2.1	1.1	1.1	1.4	1.7	1.9	1.2
GRD 11	P	91.0	89.4	91.1	92.1	90.4	92.6	89.5	91.5	91.3	94.5	89.8
	SE	0.9	1.7	1.6	1.2	2.9	1.4	1.1	1.8	2.1	2.9	1.1
PART B												
AGE 13	P	34.7	28.8	34.4	34.6	41.2*	35.1	34.2	34.4	42.2*	39.5	30.0*
	SE	2.0	5.6	3.7	2.9	3.2	2.1	2.1	4.4	2.9	5.4	2.7
GRD 8	P	41.7	36.0	40.6	42.5	46.3	44.8*	38.9	43.8	47.1	49.5	36.0*
	SE	2.2	5.2	5.4	4.2	3.0	2.6	2.3	4.6	3.4	6.7	3.2
AGE 17	P	67.4	61.2*	61.1*	69.1	76.2*	69.2	65.6	61.9	72.3*	75.6*	66.1
	SE	1.5	3.1	2.7	2.8	3.0	2.0	1.9	4.0	2.0	4.1	2.0
GRD 11	P	71.3	67.8	65.1*	73.1	78.0	75.3*	67.8*	65.8	74.1	85.0*	70.1
	SE	1.7	3.9	3.0	2.7	4.2	2.5	1.9	4.0	2.7	4.9	2.2
PART C												
AGE 13	P	43.6	39.2	45.9	47.4	41.2	43.2	44.0	46.1	45.4	36.8	42.8
	SE	1.5	2.5	2.5	2.4	4.2	1.8	2.0	2.6	2.8	6.6	2.1
GRD 8	P	45.8	44.9	48.6	46.8	43.2	47.0	44.6	48.9	47.0	34.7*	45.9
	SE	1.6	2.8	3.2	2.4	3.8	2.0	2.0	3.1	3.0	5.2	2.1
AGE 17	P	65.5	56.0*	62.4	70.8*	69.6*	67.8	63.3	63.0	68.8	68.6	64.5
	SE	1.3	3.1	2.8	2.1	1.9	2.0	1.8	3.6	3.3	4.5	1.5
GRD 11	P	69.0	59.6*	67.7	74.0*	71.0	72.7*	65.7	67.0	71.1	75.1	67.7
	SE	1.5	3.2	3.0	2.6	2.9	2.2	2.1	4.4	3.3	5.5	1.8
PART D												
AGE 13	P	32.9	26.4	32.6	35.2	37.0	31.3	34.7	31.7	41.0*	34.5	29.2
	SE	1.9	5.0	3.8	2.6	3.6	2.1	2.1	3.3	4.0	5.8	2.4
GRD 8	P	39.5	32.8	38.8	42.9	42.2	39.2	39.9	40.4	45.5	41.7	35.3
	SE	2.1	4.7	5.8	3.5	3.5	2.6	2.5	3.3	4.9	7.0	2.9
AGE 17	P	65.7	50.7*	59.3*	68.3	74.6*	65.9	65.5	62.2	70.8*	72.5	63.5
	SE	1.8	3.5	3.7	3.2	3.6	2.1	2.3	4.5	2.5	3.6	2.5
GRD 11	P	69.5	64.6	62.9	71.6	77.6*	71.6	67.7	66.3	73.4	81.1*	66.8
	SE	2.0	4.0	4.7	2.9	4.5	2.7	2.2	4.7	3.2	4.1	2.8

Find the sums.

A. $\frac{4}{12} + \frac{3}{12} =$

ANSWER ______

B. $\frac{3}{4} + \frac{1}{2} =$

ANSWER ______

C. $2\frac{2}{5} + 5 =$

ANSWER ______

D. $\frac{1}{2} + \frac{1}{3} =$

ANSWER ______

SCORING GUIDE: PARTS A & B

Categories are listed below.

NOTE: PARTS A-D FOR ALL CATEGORIES ALSO INCLUDE ANY FRACTIONS EQUIVALENT TO THE ONE OR ONES GIVEN.

PART A:

00 = NO RESPONSE
11 = 7/12 OR $.58\overline{3}$
20 = OTHER
21 = 12/12 OR 1
22 = 7/24
23 = 4/3
24 = 7
25 = 1/12 OR 12/144
39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE
11 = 5/4, 1 1/4 OR 1.25
20 = OTHER
21 = 6/4, 3/2, 1.5 OR 1 1/2
22 = 6/16 OR 3/8
23 = 4/6 OR 2/3
24 = 5
25 = 4/8, 1/2 OR 3/6
39 = I DON'T KNOW.

SCORING GUIDE: PARTS C & D

Categories are listed below.

PART C:

00 = NO RESPONSE
11 = 7 2/5, 7 4/10, 7.4 OR 37/5
20 = OTHER
21 = 2 3/5 OR -2 3/5
22 = 9/5 OR 1 4/5
23 = 12/25
24 = 17/5 OR 3 2/5
25 = 2 2/5 OR 60/25
26 = 12
39 = I DON'T KNOW.

PART D:

00 = NO RESPONSE
11 = 5/6 OR .8333...
20 = OTHER
21 = 1/6
22 = 2/5
23 = 3/2 OR 2/3
24 = 1/5
25 = 2/6 OR 1/3
39 = I DON'T KNOW.

Release #: RA32221

NAEP #: 5-A32221-919-1

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 05-38

Timing: (in seconds)
Exercise Total Time 87

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A												
AGE 9	P	36.2	30.8*	29.3*	41.9*	42.2*	34.5	37.9	27.8*	45.6*	44.9	32.9*
	SE	1.4	3.2	2.4	2.0	3.4	1.9	1.9	2.6	2.0	4.7	1.7
GRD 4	P	43.3	37.9	36.1*	50.0*	47.8	42.3	44.3	31.4*	53.0*	51.1	41.1
	SE	1.8	3.9	3.7	1.9	4.1	2.4	2.2	3.1	2.6	4.8	2.2
PART B												
AGE 9	P	18.4	16.6	14.7*	20.6	21.5	14.9*	22.1*	18.7	22.3	26.7*	15.0*
	SE	1.1	1.9	1.9	2.5	2.7	1.4	1.6	2.5	2.7	3.5	1.1
GRD 4	P	22.7	20.8	19.0	26.6	24.0	19.3*	26.0*	22.7	26.6	31.4	19.1*
	SE	1.5	2.1	2.9	3.1	3.3	1.8	2.1	3.2	3.5	4.6	1.7
PART C												
AGE 9	P	32.1	27.9	26.3*	36.7*	36.8*	27.5*	36.7*	28.6	38.2*	37.8	29.2*
	SE	1.2	2.4	2.5	1.6	2.7	1.5	2.0	2.6	2.7	3.0	1.6
GRD 4	P	38.1	35.3	30.6*	44.2*	41.2	34.2*	41.8	32.9	44.0*	42.9	36.0
	SE	1.6	2.4	3.7	2.6	3.2	2.1	2.5	3.6	3.0	4.0	2.4

Add the following.

A. $.70 + $.40 + $.20

ANSWER ________

B. .85
1.4

ANSWER ________

C. 7.54
1.52

ANSWER ________

SCORING GUIDE: PARTS A & B

Categories are listed below.

NOTE: PART A ALL CATEGORIES ARE WITH OR WITHOUT DOLLAR SIGNS.

PART A:

00 = NO RESPONSE

11 = 1.30, 1.3 OR EQUIVALENT

20 = OTHER

21 = .13 OR .130

22 = 130

23 = 13 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORIES 11, 21 OR 22

24 = 742

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 1.75

20 = OTHER

21 = .49

22 = 4.9

23 = 49 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORIES 21 OR 22

24 = 175 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 11

25 = 139 WITH ANY DECIMAL PLACEMENT

26 = 364 WITH ANY DECIMAL PLACEMENT

27 = 3514 OR 1435 WITH ANY DECIMAL PLACEMENT

39 = I DON'T KNOW.

SCORING GUIDE: PART C

Categories are listed below.

PART C:

00 = NO RESPONSE

11 = 9.06

20 = OTHER

21 = 906 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 11

22 = 806 WITH ANY DECIMAL PLACEMENT

23 = 8106 WITH ANY DECIMAL PLACEMENT

24 = 602 WITH ANY DECIMAL PLACEMENT

25 = 152754 OR 754152 WITH ANY DECIMAL PLACEMENT

39 = I DON'T KNOW.

Release #: BA32221K

NAEP #: 5-A32221K919-1

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Calculator

Overlap: 9
1977-78 Package-Exercise: 07-07

Timing: (in seconds)
Exercise Total Time 87

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 9	P	35.4	28.0*	32.8	37.5	43.9*	33.3	37.5	29.0*	39.6	44.4	35.0
	SE	1.4	2.6	2.2	2.9	3.4	1.6	2.0	3.0	3.4	7.3	1.3
GRD 8	P	40.6	33.0*	36.3*	44.2	47.9*	38.7	42.2	34.3*	44.7	53.1*	39.5
	SE	1.7	3.5	1.8	3.7	3.2	2.0	2.4	3.1	3.9	6.5	1.7
PART B												
AGE 9	P	14.4	12.9	11.6	15.8	17.3	13.4	15.4	14.3	16.5	25.0*	11.8*
	SE	1.1	2.4	1.9	2.1	2.1	1.5	1.4	2.1	2.4	3.4	1.5
GRD 8	P	17.3	15.1	13.3	20.2	19.7	16.8	17.7	17.4	18.9	32.5*	14.0*
	SE	1.5	2.9	3.2	3.0	2.6	2.1	1.6	2.6	3.1	5.7	2.0
PART C												
AGE 9	P	24.5	21.3	19.4	28.9	27.3	20.8*	28.1*	25.6	28.9	32.7	20.7*
	SE	1.5	3.2	2.8	2.9	2.3	1.6	1.9	2.9	3.4	4.9	1.6
GRD 8	P	29.2	26.4	24.4	34.8	29.5	26.2*	31.8	30.1	32.6	39.0*	25.4
	SE	1.9	3.3	4.0	4.3	1.9	2.1	2.3	3.6	4.0	4.6	2.0

Add the following.

A. $.70 + $.40 + $.20

ANSWER ______

B. .35
1.4

ANSWER ______

C. 7.84
1.52

ANSWER ______

SCORING GUIDE: PARTS A & B

Categories are listed below.

NOTE: PART A ALL CATEGORIES ARE WITH OR WITHOUT DOLLAR SIGNS.

PART A:

00 = NO RESPONSE

11 = 1.33, 1.3 OR EQUIVALENT

20 = OTHER

21 = .13 OR .130

22 = 130

23 = 13 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORIES 11, 21 OR 22

24 = 742

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 1.75

20 = OTHER

21 = .49

22 = 4.9

23 = 49 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORIES 21 OR 22

24 = 175 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 11

25 = 139 WITH ANY DECIMAL PLACEMENT

26 = 364 WITH ANY DECIMAL PLACEMENT

27 = 3514 OR 1435 WITH ANY DECIMAL PLACEMENT

39 = I DON'T KNOW.

SCORING GUIDE: PART C

Categories are listed below.

PART C:

00 = NO RESPONSE

11 = 9.06

20 = OTHER

21 = 906 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 11

22 = 806 WITH ANY DECIMAL PLACEMENT

23 = 8106 WITH ANY DECIMAL PLACEMENT

24 = 602 WITH ANY DECIMAL PLACEMENT

25 = 152754 OR 754152 WITH ANY DECIMAL PLACEMENT

39 = I DON'T KNOW.

Release #: RA32321

NAEP #: S-A32321-919-1

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 08-21

Timing: (in seconds)
Exercise Total Time 88

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	RC	PADC	RCTY	SMPL
PART A												
AGE 9	P	11.0	8.8	10.0	12.7	11.9	11.4	10.5	7.3	15.2*	18.1	9.3
	SE	1.0	1.7	1.5	2.2	2.5	1.4	1.1	1.9	1.7	5.2	1.1
GRD 4	P	13.5	10.6	12.7	16.8	13.4	14.5	12.5	7.7*	18.5*	23.5	11.5
	SE	1.3	1.9	1.3	3.1	3.2	1.9	1.3	2.1	2.0	6.8	1.4
PART B												
AGE 9	P	1.0	0.8	1.5	0.9	0.8	1.1	0.8	0.9	2.1	1.3	0.5*
	SE	0.3	0.6	0.6	0.6	0.3	0.4	0.2	0.5	0.7	1.2	0.2
GRD 4	P	1.2	0.9	2.0	1.4	0.7	1.5	1.0	0.9	2.4	1.0	0.6
	SE	0.4	0.6	0.8	0.9	0.3	0.5	0.3	0.6	0.8	1.8	0.3
PART C												
AGE 9	P	15.1	14.1	12.9	17.7	15.0	13.4	16.9	13.5	19.6*	14.0	14.1
	SE	1.2	1.8	1.7	3.2	1.8	1.4	1.6	1.9	2.1	3.8	1.7
GRD 4	P	18.2	16.9	16.2	22.2	17.0	16.7	19.7	15.4	22.9	17.4	17.3
	SE	1.3	2.2	2.2	3.4	1.7	1.6	1.8	2.2	2.4	4.7	2.0

Add the following.

A. .70 + .40 + .20

ANSWER ______

B. .35 + 1.4

ANSWER ______

C. 7.54 + 1.53

ANSWER ______

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 1.30, 1.3 OR EQUIVALENT

20 = OTHER

21 = .13 OR .130

22 = 130

23 = 13 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORIES 11, 21 OR 22

24 = 742

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 1.75

20 = OTHER

21 = .49

22 = 4.9

23 = 49 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORIES 21 OR 22

24 = 175 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 11

25 = 139 WITH ANY DECIMAL PLACEMENT

26 = 364 WITH ANY DECIMAL PLACEMENT

27 = 3514 OR 1435 WITH ANY DECIMAL PLACEMENT

39 = I DON'T KNOW.

SCORING GUIDE: PART C

Categories are listed below.

PART C:

00 = NO RESPONSE

11 = 9.06

20 = OTHER

21 = 906 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 11

22 = 806 WITH ANY DECIMAL PLACEMENT

23 = 8106 WITH ANY DECIMAL PLACEMENT

24 = 602 WITH ANY DECIMAL PLACEMENT

25 = 152754 OR 754152 WITH ANY DECIMAL PLACEMENT

39 = I DON'T KNOW.

Release #: RA32544

NAEP #: S-A32544-919-123

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Table

Overlap:
1977-78 Package-Exercise: 9: 01-03 13: 02-19 17: 02-11

Timing: (in seconds)
Exercise Total Time 55 35 30

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 9	P	56.7	46.7*	48.6*	60.0	71.0*	54.1*	59.2*	50.6	67.7*	58.9	54.1
	SE	1.5	3.9	3.6	2.6	2.4	1.9	1.8	3.7	3.0	5.5	2.6
GRD 4	P	62.8	52.5*	54.0*	68.3*	73.8*	60.3	64.9	56.1	74.9*	63.8	60.2
	SE	1.7	4.5	4.4	2.9	2.6	2.3	2.0	3.8	3.4	6.2	3.1
AGE 13	P	92.4	89.5	92.9	93.2	93.7	91.2*	93.7*	92.4	93.2	94.5	91.5
	SE	0.8	1.8	1.5	0.9	2.5	1.2	0.9	1.3	1.6	2.0	1.1
GRD 8	P	94.7	93.3	93.8	95.6	95.5	93.6	95.7	94.6	94.2	96.4	94.6
	SE	0.7	1.7	1.0	1.0	1.6	1.1	0.6	1.1	1.4	1.5	1.1
AGE 17	P	95.3	94.0	95.9	94.9	96.7	94.3*	96.4	92.4	97.1*	94.4	95.7
	SE	0.6	0.9	1.2	1.2	0.8	0.9	0.6	1.8	0.7	1.7	0.7
GRD 11	P	96.3	95.9	96.7	95.8	97.2	95.8	96.8	93.8	97.0	97.0	96.9
	SE	0.5	0.7	1.3	1.1	0.8	0.9	0.7	1.9	0.8	1.5	0.8

MENU

HAMBURGER	.85	MILK	.20
HOT DOG	.70	SOFT DRINK	.15
GRILLED CHEESE SANDWICH	.55	MILK SHAKE	.45
FRENCH FRIES	.40	ICE CREAM	.40

Sue had a hot dog, french fries, and milk. How much did she spend?

○ $1.20

● $1.30

○ $1.40

○ $1.50

○ I don't know.

Release #: RA32544K

NAEP #: 5-A32544K919-123

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Table/Calculator

Overlap: 1977-78 Package-Exercise:	9 07-04	13 11-03	17 12-03
Timing: (in seconds) Exercise Total Time	60	36	31

				REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PADC	MCTY	SMPL
AGE 9	P	62.3	52.1*	60.9	68.7	71.9*	56.7*	67.9*	62.6	65.3	62.0	60.9
	SE	1.7	3.6	2.6	3.6	3.0	1.9	2.1	4.2	3.2	5.6	2.4
GRD 4	P	69.9	58.6*	68.1	74.9	77.0*	65.6*	73.8*	68.8	71.3	69.2	70.3
	SE	1.8	3.6	2.3	3.8	3.3	2.2	2.1	3.8	3.4	5.0	2.8
AGE 13	P	76.6	73.1	76.1	80.3*	76.1	72.3*	81.0*	73.5	79.1	84.3	75.7
	SE	1.3	2.9	2.8	1.7	3.2	1.7	1.4	2.6	2.7	3.6	2.2
GRD 8	P	81.1	78.2	80.0	84.0	81.5	77.1*	84.5*	74.8	82.5	91.9*	81.7
	SE	1.4	2.4	3.5	2.4	2.1	2.0	1.3	3.3	2.8	1.6	1.7
AGE 17	P	86.6	81.7*	84.1	88.9	90.1*	83.7*	89.2*	86.0	89.9	91.3	84.4
	SE	1.1	2.6	2.7	1.7	1.4	1.6	1.1	2.5	2.0	3.0	1.6
GRD 11	P	89.1	84.5	87.1	91.3	91.8	86.4*	91.4*	87.8	92.9*	96.7*	86.7
	SE	1.2	2.8	3.3	1.5	2.2	1.9	1.2	2.9	1.7	2.8	1.5

MENU

HAMBURGER	.85	MILK	.20
HOT DOG	.70	SOFT DRINK	.15
GRILLED CHEESE SANDWICH	.55	MILK SHAKE	.45
FRENCH FRIES	.40	ICE CREAM	.40

Sue had a hot dog, french fries, and milk. How much did she spend?

- ○ $1.20
- ● $1.30
- ○ $1.40
- ○ $1.50

- ○ I don't know.

Release #: BA33021

NAEP #: 5-A33021-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape

	13	17
Overlap: 1977-78 Package-Exercise:	09-26	10-04
Timing: (in seconds) Exercise Total Time	86	71

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A												
AGE 13	P	57.8	51.6	55.0	62.3	60.7	54.1*	61.6*	56.1	60.9	60.8	56.6
	SE	1.5	3.5	2.3	3.7	2.0	1.7	2.0	3.4	3.5	3.8	2.5
GRD 8	P	64.8	60.3	64.9	69.0	64.1	61.2*	68.2*	63.8	66.4	63.1	65.0
	SE	1.6	2.4	3.2	4.5	2.1	2.0	2.0	3.5	4.0	3.5	2.3
AGE 17	P	79.4	70.6*	79.5	84.3*	81.3	79.8	79.0	72.8*	85.4*	84.5	78.6
	SE	1.3	2.4	2.3	2.7	2.6	1.8	1.6	3.2	2.3	3.8	1.6
GRD 11	P	82.7	73.9*	83.0	88.0*	82.6	83.3	82.0	77.9	87.5*	90.4*	80.9
	SE	1.2	2.4	2.0	2.0	2.7	1.8	1.5	3.1	2.6	2.2	1.5
PART B												
AGE 13	P	5[illegible].1	39.8*	50.5	57.8	58.1	49.8	54.6	52.9	59.8	52.2	48.0
	SE	2.0	4.0	4.8	4.0	3.4	2.2	2.6	4.7	5.1	4.8	2.7
GRD 8	P	61.7	50.2*	60.9	67.9	64.8	60.8	62.4	61.2	67.3	58.1	59.8
	SE	2.0	2.9	4.7	4.2	3.9	2.2	2.7	4.7	4.7	6.1	2.5
AGE 17	P	77.3	70.2*	78.4	80.9*	78.1	79.0	75.7	74.3	79.0	80.1	77.6
	SE	1.1	2.3	2.7	1.3	2.0	1.4	1.6	3.6	1.5	3.8	1.4
GRD 11	P	80.1	71.4*	81.3	84.2	81.0	83.2*	77.4	79.5	79.2	83.2	80.5
	SE	1.3	2.8	2.8	2.1	2.4	1.5	1.9	3.8	2.1	4.6	1.7
PART C												
AGE 13	P	71.6	62.9*	71.8	74.2	76.4	67.3*	76.2*	69.8	76.2	77.6	69.1
	SE	1.6	3.3	2.9	2.9	3.3	2.2	1.5	2.6	3.6	4.9	2.4
GRD 8	P	77.8	68.1*	79.2	82.2*	79.9	73.9*	81.4*	77.3	79.5	81.7	76.2
	SE	1.5	3.4	3.3	2.0	3.1	2.3	1.4	3.0	3.7	4.2	2.1
AGE 17	P	88.4	88.5	87.0	89.4	88.5	86.5*	90.2*	87.8	85.0	91.9	89.8
	SE	0.9	0.6	1.9	2.1	1.7	1.2	1.1	2.0	2.7	2.0	1.0
GRD 11	P	90.1	90.1	89.3	91.4	88.9	87.9	92.1*	92.0	85.6	92.7	91.2
	SE	1.0	1.4	2.3	2.0	2.2	1.5	1.2	1.6	2.8	2.7	1.2
PART D												
AGE 13	P	55.9	45.5*	52.9	61.8*	61.0*	51.8*	60.1*	54.6	65.2*	55.3	52.3
	SE	1.8	4.1	4.6	3.2	2.3	2.0	2.3	3.5	3.7	5.6	3.0
GRD 8	P	65.4	57.7*	63.3	71.4	66.9	61.5*	69.1*	64.6	71.9*	60.0	63.7
	SE	1.7	3.2	4.5	3.5	2.4	2.1	2.1	3.5	3.5	6.4	2.8
AGE 17	P	80.2	74.5*	78.6	83.2*	83.6*	81.2	79.2	76.3	83.3	84.9	79.6
	SE	1.1	2.5	3.1	1.5	1.7	1.3	1.6	3.6	2.1	3.0	1.3
GRD 11	P	82.5	74.5*	81.7	86.7*	85.2	84.6	80.6	81.1	85.4	83.7	81.5
	SE	1.2	2.5	2.8	1.7	2.3	1.[illegible]	1.8	3.7	2.1	4.4	1.4

Add the following.

A. .70 + .40 + .30

ANSWER ________

B. .36 + 1.4

ANSWER ________

C. 7.54 + 1.82

ANSWER ________

D. 2.37 + 1.2

ANSWER ________

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 1.30, 1.3 OR EQUIVALENT

20 = OTHER

21 = .13 OR .130

22 = 130

23 = 13 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 11, 21 OR 22

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 1.75

20 = OTHER

21 = .49

22 = 4.9

23 = 49 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 21 OR 22

24 = 175 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 11

25 = 139 WITH ANY DECIMAL PLACEMENT

39 = I DON'T KNOW.

SCORING GUIDE: PARTS C & D

Categories are listed below.

PART C:

00 = NO RESPONSE

11 = 9.06

20 = OTHER

21 = 906 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 11

22 = 806 WITH ANY DECIMAL PLACEMENT

23 = 8106 WITH ANY DECIMAL PLACEMENT

39 = I DON'T KNOW.

PART D:

00 = NO RESPONSE

11 = 4.77

20 = OTHER

21 = 477 WITH ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 11

22 = 369 WITH ANY DECIMAL PLACEMENT

39 = I DON'T KNOW.

Release #: RA33231

NAEP #: 5-A33231-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 13 08-19 17 05-09

Timing: (in seconds)
Exercise Total Time 27 27

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FADC	MCTY	SMPL
AGE 13	P	53.9	42.7*	52.0	60.1*	59.1	57.3*	50.4*	48.5	60.1*	65.1*	51.9
	SE	1.7	3.3	3.3	2.4	4.5	2.0	2.0	4.1	3.3	3.3	2.8
GRD 8	P	61.2	53.2*	58.5	70.8*	62.9	65.9*	56.8*	58.1	63.3	72.3*	59.4
	SE	1.6	3.5	2.4	1.8	4.6	2.1	2.1	3.9	3.7	4.4	2.4
AGE 17	P	77.9	68.0*	75.3	84.8*	79.6	81.5*	74.9*	74.1	78.5	83.9	79.2
	SE	1.2	3.5	2.5	1.6	2.0	1.5	1.6	3.2	2.9	4.5	1.8
GRD 11	P	82.0	73.7*	79.0	88.1*	83.0	86.9*	77.8*	76.7	82.2	85.4	84.2
	SE	1.3	4.0	2.8	1.7	2.1	1.5	1.7	3.7	3.0	3.7	1.6

The temperature was 8 degrees below zero. It rose 12 degrees. What was the new temperature?

ANSWER ________________

A33231-23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 4, 4° OR FOUR DEGREES

20 = OTHER

21 = ATTEMPTED -8 + 12 WITH WRONG OR NO ANSWER

22 = -4 OTHER THAN CATEGORY 21

23 = 20, -20 OR ATTEMPTED 12 + 8 OR 12 - (-8)

24 = 2 OR 2°

39 = I DON'T KNOW.

Release #: RA35941K

NAEP #: S-A35941K919-1

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Calculator

Overlap: 9
1977-78 Package-Exercise: 07-14

Timing: (in seconds)
Exercise Total Time 46

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	39.5	30.9*	32.5*	45.8*	47.6*	34.1*	44.8*	38.3	41.6	41.4	38.7
	SE	1.6	2.4	3.8	3.0	2.4	2.1	2.1	3.9	3.9	8.3	2.1
GRD 4	P	45.9	35.7*	36.4*	56.5*	52.0*	40.5*	56.6*	45.3	47.4	47.1	45.2
	SE	2.3	2.8	5.0	3.8	2.6	2.4	2.6	4.1	4.6	9.3	2.8

A book costs $5.25, and an airplane costs $2.75. How much more does the book cost than the airplane?

ANSWER ____________________

A35941K1

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = $2.50 OR 2.50

20 = OTHER

21 = $250 OR 250

22 = $8.00, 8.00, $800, 800 OR OTHER DECIMAL PLACEMENT

23 = $3.00, 3.00, $300, 300 OR OTHER DECIMAL PLACEMENT

24 = 14.4375 OR OTHER DECIMAL PLACEMENT

25 = 280.25, 269.75 OR OTHER DECIMAL PLACEMENT

39 = I DON'T KNOW.

Release #: RA36021

NAEP #: 5-A36021-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	13	17
	10-14	07-15
Timing: (in seconds) Exercise Total Time	59	57

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A												
AGE 13	P	21.2	16.8	19.2	23.4	24.7	19.9	22.5	20.9	24.3	31.1*	17.4*
	SE	1.4	2.2	3.3	2.5	3.0	1.8	1.6	4.0	2.9	2.9	1.9
GRD 8	P	25.7	19.0	22.5	32.2	27.4	25.9	25.6	25.8	26.4	40.2*	21.6
	SE	1.9	3.6	4.1	3.9	3.5	2.6	1.9	5.9	3.4	5.3	2.5
AGE 17	P	38.7	33.8*	38.1	38.8	43.7	40.5	37.0	35.7	48.3*	49.1	33.5*
	SE	1.7	1.7	4.2	2.5	4.6	2.2	1.9	2.9	3.5	7.2	2.2
GRD 11	P	40.5	34.9*	42.0	40.5	43.8	43.9	37.5*	38.0	49.7*	50.4	35.4*
	SE	1.8	1.9	4.9	2.6	4.9	2.6	2.1	3.8	4.1	8.4	2.2
PART B												
AGE 13	P	37.4	30.2*	33.4	40.3	44.9*	37.5	37.4	35.8	43.5*	46.8	32.9*
	SE	1.6	2.4	3.8	2.5	3.6	2.[illegible]	1.9	3.4	3.0	6.1	2.3
GRD 8	P	44.4	36.3*	38.0	51.0*	49.7	46.3	42.8	43.7	47.0	58.7	39.5*
	SE	2.1	2.8	4.6	3.2	4.8	2.7	2.3	4.5	3.5	7.8	2.9
AGE 17	P	61.3	49.6*	59.4	66.3*	66.8	63.1	59.6	54.8*	71.9*	64.7	58.2
	SE	1.5	2.8	2.3	2.0	4.6	1.7	1.7	3.4	2.9	7.8	1.8
GRD 11	P	64.2	53.6*	62.4	69.0*	69.0	66.6	62.2	58.4	74.0*	68.6	61.2
	SE	1.6	3.7	4.0	1.8	4.0	2.0	1.9	4.0	2.7	8.1	2.2
PART C												
AGE 13	P	22.7	17.8*	20.5	24.6	27.2	21.4	23.9	23.0	29.7*	33.4	17.1*
	SE	1.6	1.6	3.4	3.6	3.0	2.0	1.7	3.9	3.0	4.4	1.8
GRD 8	P	27.6	19.2*	24.2	35.1	29.4	27.7	27.5	29.2	32.2	37.5	21.5*
	SE	2.2	2.9	4.4	5.2	3.9	2.7	2.2	5.6	3.6	6.1	2.5
AGE 17	P	47.4	38.9*	47.7	49.7	51.3	48.8	46.0	43.1	60.0*	54.6	41.6*
	SE	1.8	3.3	4.0	2.8	4.2	2.7	1.6	4.2	3.2	8.0	2.2
GRD 11	P	50.3	42.1*	52.8	52.6	51.5	53.9*	47.1*	47.3	61.9*	55.0	45.0*
	SE	1.7	3.8	3.0	2.5	4.1	2.7	1.6	4.6	3.8	6.3	1.9
PART D												
AGE 13	P	26.8	20.9	27.3	28.5	29.6	26.0	27.5	24.3	33.4	36.2*	22.3*
	SE	2.0	3.2	4.4	3.6	4.2	2.4	2.0	4.3	4.1	1.5	2.4
GRD 8	P	33.5	28.2	32.7	30.4	33.2	33.7	33.2	33.7	38.5	46.5*	27.0*
	SE	2.5	3.8	5.5	5.1	5.0	3.2	2.4	6.2	4.7	2.5	3.0
AGE 17	P	53.5	45.1*	52.3	55.3	59.6	53.3	53.6	50.0	64.5*	62.6	47.9*
	SE	1.7	3.1	4.6	2.5	3.4	2.3	2.0	3.5	3.1	9.4	2.6
GRD 11	P	56.0	48.6*	56.8	56.7	61.1	56.8	55.4	54.5	65.5*	66.2	50.5*
	SE	1.9	3.7	5.1	2.4	3.8	2.4	2.1	4.1	3.4	7.8	2.8

Compute.

A. $^{-}4 - {}^{+}7 =$

○ $^{+}3$
○ $^{-}3$
○ $^{+}11$
● $^{-}11$

○ I don't know.

B. $^{+}8 - {}^{+}10 =$

○ $^{+}2$
● $^{-}2$
○ $^{+}18$
○ $^{-}18$

○ I don't know.

C. $^{+}37 - {}^{-}43 =$

○ $^{+}6$
○ $^{-}6$
● $^{+}80$
○ $^{-}80$

○ I don't know.

D. $^{-}7 - {}^{-}10 =$

● $^{+}3$
○ $^{-}3$
○ $^{+}17$
○ $^{-}17$

○ I don't know.

Release #: RA36132

NAEP #: 5-A36132-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 13 / 01-28 17 / 08-07

Timing: (in seconds)
Exercise Total Time 21 21

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 13	P	26.0	17.0*	27.1	28.5	30.3	25.4	26.5	23.3	39.9*	28.3	18.9*
	SE	1.8	3.4	2.9	4.8	4.0	2.0	2.3	4.4	3.1	3.3	3.0
GRD 8	P	33.0	20.9*	38.2	39.8	35.0	33.7	32.3	30.1	45.4*	37.3	25.1*
	SE	2.2	4.9	4.0	5.3	3.4	2.5	2.6	5.3	4.1	3.7	3.8
AGE 17	P	51.3	40.6*	47.9	55.2	58.2*	50.4	52.2	48.5	61.3*	52.9	47.0
	SE	1.9	2.7	4.4	3.5	3.9	2.3	2.6	5.2	2.7	6.2	2.3
GRD 11	P	56.2	45.6*	53.1	58.4	65.1*	57.7	54.8	54.8	65.4*	62.6	50.4*
	SE	2.2	2.8	5.0	3.9	4.7	2.4	3.0	5.6	2.9	5.0	2.8

Which expression names the same number as ${}^{-}7 - {}^{-}10$?

○ ${}^{-}7 + {}^{-}10$

○ ${}^{+}7 - {}^{-}10$

● ${}^{-}7 + {}^{+}10$

○ ${}^{-}7 - {}^{+}10$

○ I don't know.

Release #: RA36711

NAEP #: 5-A36711-919-1

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 1A. Recall and Recognition

Exercise Type: Open Ended
Stimulus Type: Tape

Overlap: 9
1977-78 Package-Exercise: 03-27

Timing: (in seconds)
Exercise Total Time 82

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	FARC	BCTY	SUPL
PART A												
AGE 9	P	93.1	93.3	90.0*	94.0	94.6	92.5	93.7	92.4	95.0	92.6	92.6
	SE	0.6	1.4	1.8	1.0	0.9	0.8	0.7	1.1	1.3	1.5	1.1
GRD 4	P	95.0	96.2	91.4*	95.8	96.3	95.2	94.9	94.0	97.1*	97.3	94.1
	SE	0.6	0.8	1.8	0.8	1.4	0.9	0.7	1.1	0.7	1.9	1.2
PART B												
AGE 9	P	92.9	93.0	90.7	93.6	94.1	91.9	93.9	90.7	94.3	94.0	93.0
	SE	0.8	1.4	1.5	1.5	1.6	1.1	0.7	1.6	1.6	1.1	1.1
GRD 4	P	95.6	96.2	91.2*	97.3	97.1	96.1	95.2	94.2	96.3	97.9	95.5
	SE	0.5	1.0	1.3	0.6	1.0	0.7	0.7	1.1	1.1	1.9	0.7
PART C												
AGE 9	P	91.7	89.3	89.4	93.4	94.0*	90.5	92.9	90.1	95.5*	91.3	93.6
	SE	0.9	3.1	1.4	1.1	1.1	1.2	0.9	1.5	1.2	2.0	1.5
GRD 4	P	94.9	92.8	91.1*	97.6*	97.0*	94.1	95.5	92.9	96.8	96.9	94.5
	SE	0.8	2.9	1.4	0.7	0.7	1.1	0.8	1.3	1.1	2.0	1.5
PART D												
AGE 9	P	87.8	85.1	86.4	89.3	90.0	86.6	89.0	86.0	92.6*	87.7	86.4
	SE	0.9	2.3	1.7	1.5	2.0	1.4	0.9	1.8	1.7	3.0	1.3
GRD 4	P	91.8	89.3	87.5*	94.3*	95.0*	91.5	92.0	88.0*	95.7*	95.0	91.0
	SE	0.7	1.4	1.9	1.0	1.0	1.1	1.0	1.9	1.3	1.8	1.2
PART E												
AGE 9	P	88.9	88.4	86.8	91.4*	88.2	87.7	90.1	88.8	90.3	83.8	89.3
	SE	0.9	2.4	1.9	1.2	1.8	1.3	1.0	1.6	1.2	3.9	1.8
GRD 4	P	92.6	92.3	88.7*	96.1*	92.5	92.5	92.6	91.2	94.2	90.3	92.8
	SE	0.7	1.9	1.8	0.7	0.9	0.9	0.9	1.4	1.2	3.1	1.1
PART F												
AGE 9	P	89.2	89.7	84.1*	91.1	91.3	88.0	90.4	88.3	92.3*	84.6	89.0
	SE	0.8	2.1	2.4	1.1	1.4	1.2	0.9	1.6	1.5	3.5	1.0
GRD 4	P	92.6	94.2	85.0*	95.5*	94.8*	92.0	93.2	92.5	94.7	90.5	92.0
	SE	0.6	1.4	1.8	0.8	0.7	0.8	0.9	1.4	1.0	2.1	0.9

Six simple addition problems will be read to you. Write only the ANSWERS in the spaces provided.

A. ______ 4 + 8 ______

B. ______ 6 + 3 ______

C. ______ 8 + 8 ______

D. ______ 5 + 9 ______

E. ______ 4 + 7 ______

F. ______ 9 + 4 ______

SCORING GUIDE: PARTS A, B & C

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 6

20 = OTHER

21 = 4 + 2

22 = 5

23 = 7

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 9

20 = OTHER

21 = 6 + 3

22 = 8

23 = 10

39 = I DON'T KNOW.

PART C:

00 = NO RESPONSE

11 = 16

20 = OTHER

21 = 8 + 8

22 = 15

23 = 17

39 = I DON'T KNOW.

SCORING GUIDE: PARTS D, E & F

Categories are listed below.

PART D:

00 = NO RESPONSE

11 = 14

20 = OTHER

21 = 5 + 9

22 = 13

23 = 15

39 = I DON'T KNOW.

PART E:

00 = NO RESPONSE

11 = 10

20 = OTHER

21 = 3 + 7

22 = 9

23 = 11

39 = I DON'T KNOW.

PART F:

00 = NO RESPONSE

11 = 13

20 = OTHER

21 = 9 + 4

22 = 12

23 = 14

39 = I DON'T KNOW.

Release #: RA37044

NAEP #: S-A37044-919-1

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 06-30

Timing: (in seconds)
Exercise Total Time 35

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 9	P	68.3	61.8*	63.2*	70.8	77.8*	68.2	68.3	63.9	76.3*	65.8	67.3
	SE	1.3	2.9	1.8	2.7	2.7	1.9	1.9	3.1	3.0	5.6	1.8
GRD 4	P	74.3	68.2*	69.0*	77.2	82.3*	75.3	73.4	68.7	82.1*	77.0	72.7
	SE	1.2	2.6	1.7	2.7	1.8	2.0	1.8	4.0	2.1	4.2	1.7

If you had 2 quarters, 1 dime and 3 nickels, how much would you have?

○ 50¢

○ 65¢

○ 70¢

● 75¢

○ 85¢

○ I don't know.

Release #: RA37211

NAEP #: 5-A37211-919-1

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 1A. Recall and Recognition

Exercise Type: Open Ended
Stimulus Type: Tape

Overlap: 9
1977-78 Package-Exercise: 01-08

Timing: (in seconds)
Exercise Total Time 48

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PARC	UCTY	SMPL
PART A												
AGE 9	P	89.4	84.5*	86.2	91.8	94.9*	89.6	89.3	84.4*	93.8*	91.8	89.4
	SE	1.0	2.2	1.8	2.2	1.2	1.1	1.4	2.0	2.3	2.4	1.5
GRD 4	P	92.9	88.2*	92.2	94.6	96.0*	93.7	92.2	89.5*	97.2*	93.2	92.4
	SE	0.8	2.4	1.1	1.2	0.9	0.9	1.1	1.1	0.8	2.3	1.5
PART B												
AGE 9	P	83.9	79.2*	79.1*	86.9	89.9*	83.4	84.4	77.4*	90.2*	88.6*	83.2
	SE	1.2	2.3	2.3	2.3	1.8	1.4	1.4	2.4	2.2	1.5	1.9
GRD 4	P	88.6	85.6	86.7	90.6	91.0	89.4	87.9	82.2*	94.2*	91.2	88.6
	SE	0.9	2.0	2.3	1.5	1.5	1.2	1.4	2.1	1.4	2.0	1.5
PART C												
AGE 9	P	87.8	83.0*	84.2	90.2	93.3*	86.5	89.0	79.5*	93.3*	93.6*	88.0
	SE	1.1	2.2	2.2	2.5	1.4	1.2	1.4	2.6	2.0	1.9	1.6
GRD 4	P	92.2	88.2*	91.1	94.0	94.9	92.2	92.2	86.3*	96.6*	95.7	92.2
	SE	0.8	2.0	1.6	1.3	1.2	0.9	1.2	1.8	0.9	2.4	1.3
PART D												
AGE 9	P	73.2	66.1*	66.8*	79.3*	79.4*	71.5	75.0	63.7*	81.1*	79.3*	73.0
	SE	1.5	2.2	3.5	2.8	3.0	1.6	1.9	3.1	4.1	2.4	2.0
GRD 4	P	79.2	73.3*	75.6	83.8*	82.8	79.2	79.1	68.6*	87.1*	85.5	79.3
	SE	1.3	2.3	3.0	2.0	3.0	1.5	1.9	2.7	3.1	3.4	1.8
PART E												
AGE 9	P	80.3	74.5*	74.6	85.0*	85.9*	78.6	81.9	70.6*	87.3*	87.8*	80.1
	SE	1.5	2.6	3.5	2.6	2.9	1.8	1.7	3.2	2.9	1.4	2.1
GRD 4	P	85.0	79.6	81.3	88.8*	89.2	84.9	85.1	76.5*	91.1*	93.5*	84.6
	SE	1.4	3.0	3.6	1.6	3.1	2.0	1.8	2.9	2.2	1.8	2.0
PART F												
AGE 9	P	74.7	66.7*	69.3*	80.1*	81.9*	74.0	75.5	63.5*	85.6*	81.5	73.8
	SE	1.4	2.6	3.0	2.5	2.5	1.6	1.8	2.9	2.8	3.3	2.1
GRD 4	P	81.3	73.1*	78.4	87.1*	85.3	82.2	80.4	71.1*	92.1*	89.0	79.6
	SE	1.4	3.0	3.4	1.5	2.7	1.6	1.8	3.2	1.8	3.4	1.8

Six simple subtraction problems will be read to you. Write only the ANSWERS in the spaces provided.

A. ______ 6 - 3 ______

B. ______ 10 - 3 ______

C. ______ 7 - 1 ______

D. ______ 14 - 9 ______

E. ______ 10 - 6 ______

F. ______ 18 - 9 ______

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE
11 = 1
20 = OTHER
21 = 4 - 3
22 = 0
23 = 2
24 = 7
39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE
11 = 7
20 = OTHER
21 = 10 - 3
22 = 6
23 = 8
24 = 13
39 = I DON'T KNOW.

SCORING GUIDE: PARTS C & D

Categories are listed below.

PARTS C:

00 = NO RESPONSE
11 = 6
20 = OTHER
21 = 7 - 1
22 = 5
23 = 7
24 = 8
39 = I DON'T KNOW.

PART D:

00 = NO RESPONSE
11 = 5
20 = OTHER
21 = 14 - 9
22 = 4
23 = 6
24 = 23
39 = I DON'T KNOW.

SCORING GUIDE: PARTS E & F

Categories are listed below.

PART E:

00 = NO RESPONSE

11 = 4

20 = OTHER

21 = 10 - 6

22 = 3

23 = 5

24 = 16

39 = I DON'T KNOW.

PART F:

00 = NO RESPONSE

11 = 3

20 = OTHER

21 = 12 - 9

22 = 2

23 = 4

24 = 21

39 = I DON'T KNOW.

Release #: NA37432

NAEP #: S-A37432-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	13 01-36	17 01-19
Timing: (in seconds) Exercise Total Time	47	46

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PADC	HCTY	SMPL
AGE 13	P	85.0	78.0*	84.2	88.1	88.9	83.6	86.4	80.5*	90.5*	88.7	83.6
	SE	1.3	3.6	2.3	1.9	2.3	1.8	1.3	2.7	1.9	4.8	1.5
GRD 8	P	90.2	85.5	89.0	92.7	92.7	88.9	91.3	87.2	92.2	91.4	[illegible]
	SE	1.1	3.6	1.7	1.3	1.5	1.7	1.1	2.0	1.8	3.6	1.8
AGE 17	P	95.1	93.7	93.6	96.4	96.4	94.3*	95.9*	95.3	94.9	98.0*	94.5
	SE	0.5	0.9	1.5	0.8	1.0	0.8	0.6	1.0	1.1	1.2	0.9
GRD 11	P	96.3	95.3	95.2	97.3	97.1	96.0	96.5	96.1	95.0	99.3*	96.4
	SE	0.7	1.4	1.8	0.8	1.0	1.0	0.7	1.2	1.2	0.7	1.1

Liz wrote this addition problem on her paper:

$$\begin{array}{r} 632 \\ 4.3 \\ .113 \\ \hline .188 \end{array}$$

Her teacher marked it wrong. Which one of the following best explains why it was marked wrong?

○ Liz does not know her basic addition facts.

● Liz does not understand decimal places.

○ Liz does not know the rule for "carrying" in addition.

○ The teacher made a mistake; Liz's answer is correct.

○ I don't know.

Release #: RA37532

NAEP #: 5-A37532-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 13 / 04-12   17 / 04-12

Timing: (in seconds)
Exercise Total Time 53 48

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PARC	HCTY	SRFL
AGE 13	P	26.2	22.2	24.9	28.5	28.7	26.5	25.9	24.6	31.6	30.3	23.8
	SE	1.8	3.1	1.7	4.8	3.7	1.8	2.3	3.4	3.9	9.4	2.3
GRD 8	P	30.4	26.9	30.3	33.5	30.2	31.3	29.5	27.6	35.6	32.3	28.8
	SE	2.3	5.2	2.1	5.9	4.4	2.8	2.6	4.4	4.8	9.2	3.4
AGE 17	P	45.0	34.4*	44.0	50.2*	48.1	44.4	45.5	46.4	50.6*	48.1	40.6*
	SE	1.3	2.5	2.3	2.2	[illegible]	2.1	2.0	3.6	2.6	6.1	1.8
GRD 11	P	47.9	38.7*	48.2	53.0*	48.0	47.8	47.9	49.7	52.9*	50.8	43.5
	SE	1.4	2.9	3.4	1.7	3.1	2.2	2.2	3.5	2.5	5.6	2.4

Fred wrote this subtraction exercise on his paper:

19.1 − .09 = 19.01

His teacher marked it wrong. Which one of the following best explains why it was marked wrong?

○ **Fred does not know his basic subtraction facts.**

○ **Fred does not understand decimal places.**

○ **Fred does not know the rule for "borrowing" in subtraction.**

● **The teacher made a mistake; Fred's answer is correct.**

○ **I don't know.**

Release #: RA41041

NAEP #: 5-A41041-919-12

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{9}{05\text{-}33}$ $\frac{13}{05\text{-}26}$

Timing: (in seconds)
Exercise Total Time 50 30

				REGION			SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	BCTY	SMPL
AGE 9	P	47.1	42.6	49.1	47.6	48.7	47.6	46.6	43.4	52.9*	43.2	46.1
	SE	1.5	2.8	2.3	3.9	2.2	1.9	1.9	3.6	3.3	4.6	1.9
GRD 4	P	51.0	48.1	53.0	50.9	51.6	52.3	49.6	46.0	57.2*	43.4	50.8
	SE	1.6	3.9	2.1	3.6	2.7	2.3	2.3	4.9	3.4	4.7	2.2
AGE 13	P	56.8	50.5*	56.1	58.5	58.1	56.6	55.5	54.0	58.3	55.5	56.2
	SE	1.4	2.3	3.6	2.4	2.5	1.7	2.0	3.2	2.3	3.7	2.2
GRD 8	P	59.7	55.7	59.7	62.7	59.9	60.5	59.0	61.7	59.6	56.4	59.5
	SE	1.4	2.0	3.7	1.8	3.2	1.9	2.1	3.3	2.2	4.8	2.3

One rabbit eats 2 pounds of food each week. There are 52 weeks in a year.

How much food will 5 rabbits eat in one week?

- ○ 2 pounds
- ● 10 pounds
- ○ 52 pounds
- ○ 104 pounds
- ○ 520 pounds

○ I don't know.

Release #: NA41521

NAEP #: 5-A41521-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	04-25	06-29
Timing: (in seconds) Exercise Total Time	85	84

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	DC	PARC	HCTY	SBPL
PART A												
AGE 13	P	69.4	65.8	66.4	70.1	75.8*	67.3	71.5	70.0	74.1	78.7*	65.3*
	SE	1.6	2.1	4.5	2.6	2.2	2.2	1.8	2.2	3.7	2.2	2.7
GRD 8	P	72.2	73.6	66.6	72.9	75.7	70.5	73.7	72.9	74.7	79.1*	69.2
	SE	2.3	3.0	5.3	3.2	2.9	2.5	2.3	2.9	4.6	2.6	3.5
AGE 17	P	74.8	74.7	73.1	75.0	[illegible]	72.2*	76.5*	74.1	73.4	77.7	74.8
	SE	1.0	2.9	2.2	[illegible]	1.9	1.6	1.3	1.8	1.6	4.4	1.0
GRD 11	P	75.3	74.4	74.2	[illegible]	77.1	72.7	77.6	74.9	73.6	80.5	75.9
	SE	1.1	3.2	2.4	[illegible]	2.3	1.9	1.4	1.8	1.9	4.8	2.1
PART B												
AGE 13	P	27.8	25.1	23.8	27.4	35.8*	26.6	29.0	27.0	31.3	40.5*	24.5
	SE	1.8	3.8	3.9	3.3	3.4	2.0	2.1	2.3	3.5	5.8	3.4
GRD 8	P	35.3	35.2	29.8	35.5	40.5	35.4	35.1	33.4	37.4	52.1*	32.1
	SE	2.5	5.5	5.6	4.0	4.4	2.6	2.8	3.0	4.2	5.4	4.7
AGE 17	P	42.4	39.5	38.4	44.6	45.9	41.6	43.3	40.3	45.2	55.9*	40.4
	SE	1.7	4.4	2.9	3.1	3.2	2.0	2.1	3.5	2.5	6.2	2.5
GRD 11	P	46.0	40.7	43.7	48.3	49.3	45.3	46.6	46.0	47.7	60.4*	43.5
	SE	2.0	6.0	3.5	3.1	3.8	2.5	2.3	3.8	2.8	6.4	3.1
PART C												
AGE 13	P	29.7	23.6*	26.2	29.8	39.8*	29.3	30.1	29.1	36.3	44.2*	24.5*
	SE	1.7	3.0	4.3	2.9	3.0	1.9	2.1	2.7	4.0	5.4	2.7
GRD 8	P	37.2	32.2	32.1	39.3	44.5*	37.3	37.0	35.2	43.4	54.1*	31.9
	SE	2.3	4.2	6.4	3.4	3.5	2.5	2.9	3.6	4.2	5.5	4.1
AGE 17	P	43.7	41.8	39.1	45.3	48.2*	43.1	44.2	42.2	48.8*	56.5*	40.6
	SE	1.5	4.6	2.7	2.9	1.7	1.8	1.9	3.4	2.1	5.2	2.2
GRD 11	P	46.3	43.0	42.3	48.0	50.3	45.7	46.8	46.6	49.8	60.6*	42.5
	SE	1.9	6.3	2.8	3.5	2.2	2.5	2.1	3.9	3.0	4.7	2.7

Find the products.

A. $\frac{3}{4} \times \frac{2}{5} =$ ____________________

B. $3\frac{1}{2} \times 6\frac{2}{3} =$ ____________________

C. $\frac{1}{6} \times 7\frac{1}{3} =$ ____________________

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 9/20

20 = OTHER

21 = 6/9, 2/3 OR ATTEMPTED $\frac{(3 + 3)}{(4 + 5)}$

22 = 27/20, 1 7/20, 3/4 + 3/5 OR ATTEMPTED 15/20 + 12/20

23 = 5/4, 15/12, 12/15, 4/5 OR ATTEMPTED 3/4 X 5/3 OR 4/3 X 3/5

24 = 3/20

25 = 6/20, 3/10 OR ATTEMPTED $\frac{(3 + 3)}{(4 \text{ X } 5)}$

26 = 9/9, 1 OR ATTEMPTED $\frac{(3 \text{ X } 3)}{(4 + 5)}$

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 70/3, 23 1/3, 140/6, $23.\overline{3}$ OR EQUIVALENT

20 = OTHER

21 = 9 3/5, 5 2/5 OR ATTEMPTED 3 + 6 + $\frac{1 + 2}{2 + 3}$ OR $\frac{7 + 20}{12 + 3}$

22 = 10 1/6, 7/2 + 20/3, 3 1/2 + 6 2/3 OR ATTEMPTED 3 3/6 + 6 4/6

23 = 21/40 OR ATTEMPTED 7/2 DIVIDED BY 20/3 = 7/2 X 3/20

24 = 18 1/3, 18 2/6 OR ATTEMPTED 3 X 6 + 1/2 X 2/3

25 = 9 2/6 OR ATTEMPTED 6 + 3 + (1 X 2/3 X 2),
18 2/5 OR ATTEMPTED 3 X 6 + (1 X 2/3 + 2) OR
18 3/5 OR ATTEMPTED 3 X 6 + (1 + 2/2 + 3)

39 = I DON'T KNOW.

SCORING GUIDE: PART C

Categories are listed below.

PART C:

00 = NO RESPONSE

11 = 22/18, 11/9, 1 2/9 OR EQUIVALENT

20 = OTHER

21 = 7 2/9, 2 5/9 OR ATTEMPTED 7 + $\frac{1 + 1}{6 + 3}$ OR $\frac{1 + 22}{6 + 3}$

22 = 1/44 OR ATTEMPTED 1/6 DIVIDED BY 22/3 = 1/6 X 3/22

23 = 7 1/18 OR ATTEMPTED 7 + 1/6 X 1/3

24 = 7 1/2, 1/6 + 7 1/3, 1/6 + 22/3 OR ATTEMPTED 0 + 7 + (1/6 + 2/6)

25 = 7 1/9 OR ATTEMPTED 0 + 7 + (1 X 1/6 + 3) OR
7 2/18 OR ATTEMPTED 0 + 7 + (1 + 1/6 X 3)

39 = I DON'T KNOW.

Release #: BA02021

NAEP #: 5-A02021-919-1

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 06-34

Timing: (in seconds)
Exercise Total Time 72

		REGION				SEX		COMMUNITY SIZE (DOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FADC	UCTY	SMPL
PART A											
AGE 9 P	59.4	51.1*	58.8	65.0*	61.3	61.8*	57.1*	52.1*	64.3	48.8	62.3
SE	1.7	3.0	3.9	2.9	3.9	1.9	2.2	3.6	3.2	7.6	2.2
GRD 4 P	63.8	55.9*	62.8	69.7*	65.7	66.9*	61.0	56.2*	70.4	51.2	65.9
SE	1.8	3.3	4.9	2.7	3.5	2.0	2.5	3.9	2.4	7.8	2.5
PART B											
AGE 9 P	22.4	14.9*	20.8	25.8	27.6	22.4	22.4	21.6	24.7	16.8	22.6
SE	1.4	2.7	2.0	2.7	3.2	1.9	1.8	3.9	2.6	2.9	1.9
GRD 4 P	25.5	18.1*	23.9	28.8	30.7	26.3	24.8	23.3	29.1	19.6	25.6
SE	1.7	3.7	2.1	3.3	3.3	2.1	2.2	4.8	3.4	3.9	2.3
PART C											
AGE 9 P	28.7	21.0*	26.5	33.1	33.5	28.6	28.8	25.1	32.0	18.8*	30.5
SE	1.6	3.6	2.3	3.1	3.1	2.2	1.9	3.6	2.7	2.4	2.3
GRD 4 P	32.9	25.4	28.5	39.0	37.5	34.1	31.8	27.5	38.0	22.4*	34.3
SE	2.9	4.8	3.9	3.7	3.2	2.6	2.2	4.1	3.6	2.7	2.6
PART D											
AGE 9 P	21.6	16.6*	21.0	24.2	24.4	22.6	20.7	18.0	24.2	14.4	23.3
SE	1.2	2.3	2.8	2.4	1.7	1.8	1.6	2.2	2.8	4.1	1.7
GRD 4 P	23.7	19.1	21.9	26.8	26.3	25.3	22.2	17.5*	27.2	14.7	25.9
SE	1.4	3.3	2.8	2.9	1.8	2.2	1.8	2.6	3.3	4.7	1.8

A. What is $\frac{1}{2}$ of 6?

ANSWER ____

B. What is $\frac{1}{4}$ of 8?

ANSWER ____

C. What is $\frac{1}{3}$ of 9?

ANSWER ____

D. What is $\frac{2}{3}$ of 9?

ANSWER ____

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 3, 6/2 OR EQUIVALENT

20 = OTHER

21 = 1/12

22 = 1/6

23 = 5 1/2

24 = 6 1/2

25 = 1/3

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 2, 8/4 OR EQUIVALENT

20 = OTHER

21 = 1/32

22 = 1/8

23 = 4

24 = 8 1/4

25 = 7 3/4

39 = I DON'T KNOW.

SCORING GUIDE: PARTS C & D

Categories are listed below.

PART C:

00 = NO RESPONSE

11 = 3, 9/3 OR EQUIVALENT

20 = OTHER

21 = 1/27

22 = 1/9

23 = 6

24 = 8 2/3

25 = 9 1/3

39 = I DON'T KNOW.

PART D:

00 = NO RESPONSE

11 = 6, 18/3, 6/1 OR EQUIVALENT

20 = OTHER

21 = 9 2/3 OR 8 1/3

22 = 3 OR 1/3

23 = ATTEMPTED $\frac{2 \times 9}{3 \times 9}$

24 = 27/2, 13/(1/2), 9 X 3/2, 9/(2/3) OR ATTEMPTED $\frac{3 \times 9}{2}$

25 = 2/7, 2/3 X 1/9, (2/3)/9 OR ATTEMPTED $\frac{2}{3 \times 9}$

26 = ATTEMPTED 2/3 X 9 WITH NO OR WRONG ANSWER

39 = I DON'T KNOW.

Release #: NA43221

NAEP #: S-A43221-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	13 03-29	17 10-25
Timing: (in seconds) Exercise Total Time	59	63

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
PART A												
AGE 13	P	48.7	45.5	50.4	49.7	49.2	44.9*	52.8*	45.4	56.8*	44.3	47.5
	SE	1.8	4.8	3.7	3.3	2.5	2.2	2.4	4.5	3.9	2.8	2.3
GRD 8	P	56.6	53.4	58.5	59.9	54.4	54.5	58.5	55.3	61.3	52.7	55.4
	SE	1.9	5.0	3.9	4.9	2.9	2.3	2.5	5.1	4.1	2.8	2.6
AGE 17	P	78.1	79.3	72.4*	79.3	82.1	76.0*	80.1*	76.6	78.0	85.7*	77.5
	SE	1.5	1.6	3.3	3.0	3.0	1.6	1.9	4.5	2.8	3.1	2.1
GRD 11	P	81.3	84.0	74.6*	82.4	85.9	80.1	82.4	80.9	81.4	90.6*	79.8
	SE	1.6	1.8	3.8	2.2	3.8	1.9	2.0	4.1	3.4	2.2	2.2
PART B												
AGE 13	P	35.8	36.0	34.4	33.6	39.5	33.5*	38.2*	34.6	42.8*	36.1	32.8
	SE	1.9	4.6	4.1	3.2	2.9	2.2	2.2	3.9	3.4	7.0	2.7
GRD 8	P	41.3	41.2	41.7	41.1	41.2	40.6	41.9	41.9	48.9	41.8	36.6
	SE	2.2	5.3	4.1	4.7	3.6	3.0	2.6	4.8	4.4	6.4	3.0
AGE 17	P	65.1	58.0*	63.3	67.1	71.7*	67.8*	62.6	66.2	71.6*	67.5	60.5*
	SE	1.5	1.7	3.7	2.7	3.4	1.7	2.3	4.8	2.5	6.7	2.1
GRD 11	P	67.8	61.1*	64.7	69.7	75.6	72.6*	63.4*	69.7	72.7	77.4	62.3*
	SE	1.7	1.4	4.3	2.4	4.4	1.8	2.6	4.3	2.8	5.2	2.7
PART C												
AGE 13	P	34.4	33.6	34.8	34.1	35.0	31.2*	37.7*	34.3	45.5*	27.8	30.2
	SE	2.2	5.6	4.3	4.0	2.7	2.3	2.5	4.1	4.8	4.8	3.2
GRD 8	P	41.0	38.7	42.1	44.8	38.3	38.5	43.2	42.2	49.8	33.6	37.0
	SE	2.6	6.1	6.2	5.1	3.1	2.8	3.1	4.9	5.4	5.0	4.1
AGE 17	P	72.7	67.8	70.9	72.9	79.3*	72.2	73.1	72.4	78.9*	82.2	67.6*
	SE	1.5	3.0	3.2	1.8	3.6	1.9	1.9	3.8	2.2	5.3	2.2
GRD 11	P	75.9	72.2	72.3	75.6	85.1*	77.4	74.6	75.7	80.4	92.2*	70.7*
	SE	1.7	4.4	3.7	1.4	4.3	2.3	2.3	3.3	2.8	3.9	2.7
PART D												
AGE 13	P	38.5	38.8	37.9	38.4	38.9	36.4	40.8	39.3	48.0*	36.0	33.9*
	SE	2.0	5.2	4.3	3.2	2.7	2.1	2.5	4.4	4.1	5.0	2.4
GRD 8	P	43.8	43.8	45.1	45.9	40.8	42.0	45.4	46.6	53.0*	43.4	37.3
	SE	2.7	6.3	6.8	5.0	3.8	3.0	3.3	4.8	5.0	4.7	4.1
AGE 17	P	66.9	61.4*	65.2	67.6	73.5*	69.7*	64.3*	71.7	70.4	73.3	61.3*
	SE	1.4	2.1	2.8	2.1	3.8	1.8	2.1	3.2	2.9	6.8	2.1
GRD 11	P	70.1	65.4*	67.3	70.4	78.0	74.3*	66.2*	74.9	72.3	80.3*	64.7*
	SE	1.6	1.5	3.5	2.3	4.6	2.0	2.4	2.8	3.1	4.1	2.7

Compute.

A. $^{-}8 \times {}^{+}2 =$

- ○ $^{+}16$
- ● $^{-}16$
- ○ $^{-}6$
- ○ $^{+}10$
- ○ $^{-}10$
- ○ I don't know.

B. $^{+}7 \times {}^{-}7 =$

- ○ $^{+}49$
- ● $^{-}49$
- ○ 0
- ○ $^{+}14$
- ○ $^{-}14$
- ○ I don't know.

C. $^{-}4 \times {}^{-}5 =$

- ● $^{+}20$
- ○ $^{-}20$
- ○ $^{-}9$
- ○ $^{+}9$
- ○ $^{+}1$
- ○ $^{-}1$
- ○ I don't know.

D. $^{+}5 \times {}^{-}2 =$

- ○ $^{+}10$
- ● $^{-}10$
- ○ $^{+}3$
- ○ $^{-}3$
- ○ $^{+}7$
- ○ $^{-}7$
- ○ I don't know.

Release #: RA44221

NAEP #: 5-A44221-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	01-31	10-27
Timing: (in seconds)		
Exercise Total Time	93	71

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PARC	MCTY	SBRL
PART A												
AGE 13	P	68.8	60.9*	65.6	73.6*	74.1	64.7*	72.9*	62.9*	75.3*	79.5*	66.6
	SE	1.6	3.5	3.4	2.0	4.1	2.4	1.8	3.6	2.2	4.6	2.2
GRD 8	P	73.5	68.7	68.4	76.6	79.3*	69.9*	76.7*	70.5	77.4	81.5*	70.6
	SE	1.7	4.2	3.3	2.8	3.0	2.5	1.7	3.5	2.2	3.3	2.8
AGE 17	P	64.7	65.5	65.3	64.4	63.7	64.6	64.9	62.0	64.5	76.1*	64.1
	SE	1.6	4.3	2.3	2.9	3.4	2.2	2.2	3.4	3.3	2.0	1.9
GRD 11	P	67.8	69.9	66.0	69.2	65.9	68.7	66.9	64.5	66.9	78.6*	68.0
	SE	1.6	4.6	2.5	2.6	3.8	2.3	2.6	3.7	3.2	4.2	1.9
PART B												
AGE 13	P	46.4	37.0*	47.3	51.0	49.2	40.2*	52.8*	44.3	54.4*	48.6	42.6
	SE	1.7	3.4	3.7	3.2	3.6	2.0	2.3	2.9	3.6	5.6	2.6
GRD 8	P	51.5	44.6*	51.3	53.9	55.0	45.5*	56.9*	51.6	55.1	53.9	48.3
	SE	2.1	3.3	5.6	3.0	4.2	2.2	2.7	3.9	4.8	6.2	3.1
AGE 17	P	49.5	44.5	48.4	52.8	51.2	47.2	51.7	45.5	52.1	50.3	49.9
	SE	1.6	3.1	4.0	2.3	2.9	2.1	1.9	4.1	2.2	4.6	2.7
GRD 11	P	52.2	49.3	51.3	54.0	53.6	51.1	53.3	47.4	53.9	59.6	52.4
	SE	1.7	4.0	4.1	2.6	2.8	2.1	2.2	4.2	2.8	4.9	2.6

Find the quotients.

A. $6\overline{)608}$

ANSWER ________________

B. $28\overline{)3052}$

ANSWER ________________

A44221-23
PARTS A&B

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 101 1/3, 101 2/6 OR 101 R 2/6

12 = 101 R 2

13 = 101.33..., 101.3 1/3, $101.\overline{3}$ OR EQUIVALENT

20 = OTHER

21 = .0098684 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED $608\overline{)6}$

22 = 101

23 = 11, 11 1/3, 11.33 OR 11 R 2

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 109

20 = OTHER

21 = .0091743 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED $3052\overline{)28}$

2[illegible] = 19

Release #: RA04221K

NAEP #: S-A04221K919-1

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Calculator

Overlap: 9
1977-78 Package-Exercise: 07-06

Timing: (in seconds)
Exercise Total Time 71

			NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
				REGION				SEX		COMMUNITY SIZE (DOC)			
PART A													
AGE	9	P	36.7	29.8*	30.9*	39.5	47.1*	33.7*	39.7*	35.4	40.5	38.4	35.4
		SE	1.5	1.9	2.8	3.4	2.6	1.7	2.0	3.7	2.6	6.0	2.2
GRD	4	P	42.7	35.9*	37.4	45.7	51.0*	41.4	43.9	40.6	44.9	43.5	42.5
		SE	1.8	1.9	3.2	4.0	3.5	2.2	2.1	3.5	3.0	6.1	2.8
PART B													
AGE	9	P	50.0	42.9*	44.2*	53.1	60.1*	45.8*	54.1*	46.5	54.4	57.9	48.3
		SE	1.7	3.2	2.2	3.0	3.8	2.1	2.2	3.6	3.7	6.2	2.5
GRD	4	P	56.3	48.0*	50.1*	62.5	63.2	53.0	59.3	51.9	59.0	66.4*	55.6
		SE	2.0	4.2	3.1	3.0	4.1	2.5	2.6	3.5	3.9	4.9	3.5

Find the quotients.

A. $6\overline{)608}$

ANSWER ____________

B. $28\overline{)3052}$

ANSWER ____________

A04221K1
PARTS A&B

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 101 1/3, 101 2/6 OR 101 R 2/6

12 = 101 R 2

13 = 101.33..., 101.3 1/3, $101.\overline{3}$ OR EQUIVALENT

20 = OTHER

21 = .0098684 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED $608\overline{)6}$

22 = 101

23 = 11, 11 1/3, 11.33 OR 11 R 2

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 109

20 = OTHER

21 = .0091743 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED $3052\overline{)28}$

22 = 19

Release #: BA45032

NAEP #: S-A45032-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2P. Estimating Computations and Measurements

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	13	17
	04-21	02-32
Timing: (in seconds) Exercise Total Time	52	49

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 13	P	6.7	6.8	5.6	6.7	8.0	7.0	6.5	6.9	6.1	7.8	6.8
	SE	0.6	1.0	0.8	1.3	1.5	0.7	1.0	1.1	1.3	1.2	1.0
GRD 8	P	8.0	8.5	7.5	8.2	7.9	8.1	7.9	8.5	6.7	8.9	8.3
	SE	0.7	1.7	1.2	1.6	1.6	1.0	1.3	1.4	1.4	2.4	1.2
AGE 17	P	14.9	16.0	15.0	14.6	18.3	16.7	13.2	15.0	10.2	20.6*	11.5*
	SE	1.0	2.2	1.5	1.3	3.2	1.5	1.4	1.4	1.8	3.2	1.6
GRD 11	P	15.5	15.7	14.7	15.7	15.9	18.2	13.1*	15.6	18.1	23.0*	12.2*
	SE	1.1	2.4	1.8	1.5	3.3	1.9	1.3	1.6	2.1	3.3	1.8
PART B												
AGE 13	P	24.6	22.2	26.1	26.4	22.7	27.9*	21.1*	21.6	29.8	27.4	23.3
	SE	1.3	2.6	2.8	1.6	3.1	1.6	1.7	2.3	3.4	5.0	1.6
GRD 8	P	26.7	23.5	28.9	31.3*	22.6	30.5*	23.2*	23.3	30.6	27.2	26.5
	SE	1.4	2.7	2.9	2.1	2.9	1.7	2.1	2.5	3.6	5.1	1.8
AGE 17	P	39.1	35.9	33.1*	43.6	42.8	45.0*	33.4*	31.3*	42.1	47.0	39.1
	SE	1.3	2.4	2.6	2.7	2.0	1.8	1.7	2.5	3.0	8.1	1.8
GRD 11	P	41.6	39.4	33.8*	47.0*	44.8	48.8*	35.2*	33.0*	45.3	51.9	41.1
	SE	1.5	2.3	2.8	3.0	2.9	2.1	2.0	3.0	3.1	6.6	1.9
PART C												
AGE 13	P	19.3	19.5	18.3	19.5	19.5	18.1	20.6	19.0	21.0	19.5	18.7
	SE	0.9	2.1	1.8	1.3	2.3	1.4	1.5	1.7	1.9	1.5	1.3
GRD 8	P	20.6	20.8	22.0	21.2	18.3	19.1	22.0	17.2	22.5	21.8	21.2
	SE	1.3	3.7	2.6	2.2	1.9	1.6	1.9	2.4	2.1	1.0	2.1
AGE 17	P	28.3	27.2	24.0*	29.0	33.4*	26.3	30.3	25.0	30.0	36.4*	27.2
	SE	1.2	2.6	1.7	2.6	2.3	1.8	1.4	2.6	2.5	3.6	1.6
GRD 11	P	30.7	28.4	26.7	32.8	34.0	29.3	31.9	28.3	32.3	36.9	29.5
	SE	1.4	3.3	2.3	2.8	2.6	2.2	1.6	2.4	2.8	4.9	1.9

ESTIMATE the quotient for each of these division problems. You will not be given enough time to calculate the answer using paper and pencil. For each problem, mark the answer closest to your estimate.

A. 30 ÷ 317

- ● .1
- ○ .01
- ○ 1
- ○ 10

- ○ I don't know.

B. 250 ÷ .5

- ○ 50
- ● 500
- ○ 1000
- ○ 1250

- ○ I don't know.

C. .229 ÷ .4

- ○ .006
- ○ .06
- ● .6
- ○ 6

- ○ I don't know.

Release #: RA05032

NAEP #: S-A05032-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

	13	17
Overlap: 1977-78 Package-Exercise:	10-10	05-13
Timing: (in seconds) Exercise Total Time	19	19

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 13	P	79.6	74.3*	77.5	82.9	82.6	76.3*	82.8*	73.3*	84.1*	81.0	80.1
	SE	1.1	1.5	2.8	2.1	1.9	1.6	1.2	3.0	2.3	2.9	1.6
GRD 8	P	85.0	82.6	81.9	87.6	87.1	83.0	86.7	82.1	87.0	87.2	84.6
	SE	1.9	1.7	2.9	2.0	1.5	1.6	1.2	3.8	1.9	3.4	1.4
AGE 17	P	92.4	89.3	92.4	92.2	95.2*	91.6	93.2	91.0	93.4	98.6*	91.6
	SE	1.0	1.9	2.2	2.0	1.4	1.3	1.1	2.1	2.3	0.7	1.1
GRD 11	P	94.2	92.9	94.5	93.3	96.4	94.2	94.3	94.2	94.3	98.2*	93.6
	SE	0.9	1.6	1.7	1.9	1.3	1.0	1.2	1.9	1.9	0.9	1.1

Which of the following means 4^3 ?

○ 4 × 3

○ 3 × 3 × 3 × 3

● 4 × 4 × 4

○ (4 × 10) + (3 × 1)

○ I don't know.

Release #: NA46721

NAEP #: 5-A46721-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 13/08-34 17/03-26

Timing: (in seconds)
Exercise Total Time 142 137

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A												
AGE 13	P	34.7	20.0*	34.8	41.4*	40.7	38.4*	30.9*	31.4	42.9*	37.3	32.1
	SE	1.7	2.2	4.5	2.4	3.5	1.9	2.2	3.4	3.6	4.2	2.8
GRD 8	P	42.2	26.5*	42.9	51.4*	45.1	47.9*	37.0*	40.4	47.8	40.7	40.2
	SE	1.9	3.4	4.1	2.8	3.9	2.2	2.4	3.8	4.1	6.4	2.8
AGE 17	P	58.0	50.5*	54.9	65.2*	57.8	67.3*	49.2*	49.0*	64.0*	67.1*	58.2
	SE	1.8	4.0	4.5	2.7	3.6	2.0	2.5	3.7	2.2	4.0	2.8
GRD 11	P	62.6	56.0	61.2	68.4*	61.3	73.1*	53.5*	54.9*	65.6	70.6	64.0
	SE	1.8	4.0	4.0	3.0	3.8	2.0	2.5	3.9	2.8	4.9	2.5
PART B												
AGE 13	P	8.0	2.5*	7.9	8.2	13.3*	8.5	7.6	9.5	10.2	11.4	5.6*
	SE	0.8	0.9	2.1	1.3	1.9	1.1	1.0	1.7	1.3	3.5	1.3
GRD 8	P	10.5	3.3*	11.0	11.2	15.2*	11.7	9.4	12.3	12.2	13.4	7.9
	SE	1.1	1.1	2.9	1.6	1.9	1.5	1.2	2.1	1.5	3.8	1.8
AGE 17	P	27.1	24.8	18.5*	31.5*	31.7	28.6	25.6	25.9	28.7	36.6	25.9
	SE	1.4	2.9	2.4	2.7	2.7	2.1	1.9	2.4	3.1	5.9	2.2
GRD 11	P	28.1	27.7	20.5*	32.1	30.5	31.8*	24.9*	29.5	28.2	29.9	27.2
	SE	1.4	2.8	2.1	2.7	2.6	2.2	1.7	2.4	3.2	6.2	2.1
PART C												
AGE 13	P	3.8	1.5*	3.7	3.6	6.5	3.3	4.4	4.8	2.8	10.5*	2.6
	SE	0.7	0.8	1.6	1.1	1.7	0.7	1.8	1.4	0.9	2.0	0.9
GRD 8	P	5.2	1.9*	5.2	5.5	7.5	4.5	5.9	6.9	3.6	12.5*	3.7
	SE	0.9	1.1	2.2	1.6	1.8	1.0	1.2	1.9	1.1	2.1	1.3
AGE 17	P	12.0	7.4*	7.0*	17.4*	13.7	14.3*	9.8*	11.5	15.1	11.8	10.4
	SE	1.1	1.2	1.8	1.9	2.6	1.5	1.2	1.6	2.6	4.6	1.5
GRD 11	P	12.4	7.6*	6.5*	17.5*	15.0	15.1*	10.0*	12.7	14.2	12.2	11.3
	SE	1.1	1.3	2.3	2.2	2.6	1.8	1.2	2.1	2.5	6.1	1.5
PART D												
AGE 13	P	12.1	5.9*	12.8	14.1	15.1	14.4*	9.7*	12.5	14.3	15.5	10.3
	SE	1.3	1.2	2.4	1.7	1.9	1.3	1.3	2.2	1.5	2.9	1.4
GRD 8	P	15.5	8.4*	16.6	18.7	17.3	18.9*	12.4*	15.8	16.3	19.1	14.2
	SE	1.3	1.5	3.5	2.6	2.1	1.9	1.7	2.8	1.8	3.3	1.8
AGE 17	P	30.9	23.5*	25.8*	37.1*	34.2	36.9*	25.3*	26.1	35.1	35.7	30.5
	SE	1.3	2.2	2.7	2.6	2.7	1.8	2.0	2.5	3.3	6.9	2.0
GRD 11	P	33.6	26.3*	30.4	39.5*	34.3	42.9*	25.5*	30.6	37.6	38.0	32.3
	SE	1.6	2.1	3.3	3.4	3.2	2.2	2.2	2.8	4.0	8.3	2.2

A. 30 is what percent of 60?

ANSWER ______

B. What is 4% of 75?

ANSWER ______

C. 12 is 15% of what number?

ANSWER ______

D. What is 125% of 40?

ANSWER ______

E. 6 is what percent of 120?

ANSWER ______

EXERCISE: A46721 NAEP NO: A46721-

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART E												
AGE 13	P	6.1	2.5*	6.0	6.3	9.3*	6.2	6.0	6.6	6.7	12.1*	4.4*
	SE	0.8	0.6	1.9	1.3	1.7	1.0	1.0	1.4	1.4	2.8	1.0
GRD 8	P	7.7	2.5*	7.2	9.2	10.8	8.2	7.3	8.5	7.1	15.9*	5.9
	SE	1.0	0.8	2.8	1.9	2.1	1.4	1.3	2.0	1.6	3.7	1.5
AGE 17	P	16.0	14.2	11.4*	19.7*	17.1	21.6*	10.7*	16.2	19.5	16.9	13.9
	SE	1.0	1.8	1.9	2.0	1.7	1.5	1.1	1.7	2.2	5.6	1.5
GRD 11	P	17.3	16.6	13.2*	19.9	18.2	24.8*	10.8*	17.7	20.0	19.1	15.4
	SE	1.0	1.5	2.2	2.1	2.0	1.5	1.3	2.0	2.2	6.0	1.5

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 50% OR 50

20 = OTHER

21 = .50, 5/10, 1/2 OR EQUIVALENT

22 = ATTEMPTED $60\overline{)30}$ WITH NO OR WRONG ANSWER OTHER THAN CATEGORY 21

23 = 200%, 200, 20, 2 OR ATTEMPTED $30\overline{)60}$

24 = 5%, 5 OR ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 11 OR 21

25 = 30% OR 30

26 = 18 OR ATTEMPTED 60 X .3, 30 X .6 OR OTHER DECIMAL PLACEMENT

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 3

20 = OTHER

21 = 300 OR ATTEMPTED 75 X 4

22 = 30 OR ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 11, 21 OR 24

23 = 18.75 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED $4\overline{)75}$

24 = 3% OR 3/100

39 = I DON'T KNOW.

A46721-23
PART C

SCORING GUIDE: PART C

Categories are listed below.

PART C:

00 = NO RESPONSE

11 = 80

20 = OTHER

21 = ATTEMPTED .15)$\overline{12}$ OR OTHER DECIMAL PLACEMENT

22 = 180 OR ATTEMPTED 12 X 15

23 = 800, 8 OR OTHER DECIMAL PLACEMENT OTHER THAN CATEGORY 11 OR 26

24 = 1.8 OR ATTEMPTED 12 X .15

25 = 13.8

26 = 80% OR 80/100

39 = I DON'T KNOW.

A46721-23
PART D

SCORING GUIDE: PART D

Categories are listed below.

PART D:

00 = NO RESPONSE

11 = 50

20 = OTHER

21 = ATTEMPTED 40 X 1.25

22 = 5000 OR ATTEMPTED 40 X 125

23 = 5 OR ATTEMPTED 40 X .125

24 = .5, 500 OR OTHER DECIMAL PLACEMENT EXCEPT CATEGORY 11, 22, 23 OR 27

25 = 3.125 OR ATTEMPTED 40)$\overline{125}$ OR OTHER DECIMAL PLACEMENT

26 = .32 OR ATTEMPTED 125)$\overline{40}$ OR OTHER DECIMAL PLACEMENT

27 = 50%, 50/100

39 = I DON'T KNOW.

A46721-23
PART B

SCORING GUIDE: PART B

Categories are listed below.

PART B:

00 = NO RESPONSE

11 = 5% OR 5

20 = OTHER

21 = .05 OR ATTEMPTED 120)$\overline{6}$

22 = .005 OR OTHER DECIMAL PLACEMENT EXCEPT CATEGORY 11 OR 21

23 = 20 OR ATTEMPTED 6)$\overline{120}$

24 = 72 OR ATTEMPTED 6 X 12 OR OTHER DECIMAL PLACEMENT

39 = I DON'T KNOW.

Release #: RA46721K

NAEP #: 5-A46721K919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Calculator

Overlap:	13	17
1977-78 Package-Exercise:	11-12	12-14

Timing: (in seconds)		
Exercise Total Time	141	136

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	DC	PABC	MCTY	SBPL
PART A												
AGE 13	P	25.1	15.4*	23.6	30.6	29.5	29.7*	20.8*	22.7	34.1*	39.7	19.2*
	SE	1.9	3.3	4.0	3.4	4.4	2.1	2.4	3.9	4.6	10.4	2.2
GRD 8	P	30.5	19.0*	29.5	36.7	34.8	37.1*	24.9*	27.0	37.9	47.2	24.8*
	SE	2.3	4.0	4.8	4.3	5.1	2.5	2.8	4.9	5.0	12.8	2.8
AGE 17	P	46.7	37.7*	44.5	50.8	51.2	56.7*	37.6*	42.2	55.2*	56.9*	43.1
	SE	1.8	3.5	4.5	2.8	[illegible]	2.3	1.9	3.5	3.6	4.0	2.6
GRD 11	P	50.2	42.0*	45.7	52.4	59.0*	62.8*	39.3*	44.5	58.4*	69.7*	46.3
	SE	1.9	3.3	5.1	2.9	3.7	2.7	2.1	3.9	3.6	8.9	3.0
PART B												
AGE 13	P	8.3	4.5*	9.2	6.9	13.1*	8.3	8.4	7.8	10.4	14.1	6.6
	SE	1.0	1.0	2.7	1.5	2.4	1.0	1.4	2.0	2.6	3.1	1.5
GRD 8	P	10.6	5.6*	12.1	8.9	15.2	11.5	9.8	9.7	12.1	17.3	8.9
	SE	1.4	1.2	3.5	1.8	3.1	1.4	1.8	2.5	2.9	3.9	2.3
AGE 17	P	35.7	29.6	30.9	40.3	39.5	39.4*	32.2*	30.2	40.5	41.3	35.1
	SE	1.7	4.2	3.6	3.0	2.3	2.3	1.8	4.1	2.8	4.6	2.6
GRD 11	P	38.2	29.8*	33.9	43.2	42.8	43.8*	33.4*	30.9	43.9	49.6	37.4
	SE	1.9	4.4	3.9	3.2	3.1	2.4	2.1	4.6	3.0	8.1	2.8
PART C												
AGE 13	P	3.3	2.5	3.4	2.7	4.9	2.6	4.0	4.7	4.6	2.1	2.2
	SE	0.6	0.8	1.5	0.7	1.4	0.6	0.8	1.7	1.6	1.0	0.5
GRD 8	P	4.1	2.5	4.6	3.9	5.3	3.6	4.6	5.6	5.4	2.1	2.9
	SE	0.8	1.0	2.0	1.0	1.6	0.8	1.0	2.0	1.9	1.4	0.8
AGE 17	P	18.6	17.1	18.6	18.4	19.9	20.6*	16.7*	17.0	19.9	29.2*	17.2
	SE	1.4	3.2	3.2	2.4	2.5	1.9	1.4	2.9	2.7	5.2	1.8
GRD 11	P	19.2	17.3	18.6	18.2	22.9	22.7*	16.2*	15.7	21.5	34.3	17.8
	SE	1.5	2.9	3.4	2.7	3.0	2.1	1.7	2.8	2.9	8.8	2.0
PART D												
AGE 13	P	9.6	6.3*	10.3	7.2	15.2*	10.9	8.3	10.7	12.8	14.4	6.6*
	SE	1.0	1.6	2.6	1.2	2.6	1.1	1.5	2.7	2.7	2.9	1.4
GRD 8	P	11.9	7.7*	13.4	8.8*	17.3	14.0	10.1	13.7	14.2	17.5	8.5*
	SE	1.3	1.8	3.1	1.3	3.2	1.4	1.9	3.4	2.8	3.3	1.8
AGE 17	P	34.3	33.7	30.8	37.3	37.0	40.9*	28.2*	29.5	37.2	45.9	33.6
	SE	1.8	4.2	3.8	2.4	4.0	2.4	1.9	4.1	2.7	8.7	2.3
GRD 11	P	37.0	31.6	33.0	40.3	41.4	45.8*	29.5*	32.5	40.3	55.1	35.3
	SE	1.9	3.8	4.1	2.7	4.8	2.6	2.1	4.6	2.8	11.9	2.1

A. 30 is what percent of 60?

ANSWER ____________

B. What is 4% of 75?

ANSWER ____________

C. 12 is 15% of what number?

ANSWER ____________

D. What is 125% of 40?

ANSWER ____________

E. 6 is what percent of 120?

ANSWER ____________

EXERCISE: A46721K NAEP NO: A46721K

A46721K23
PARTS A&B

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART E												
AGE 13	P	5.6	3.3*	7.1	4.2	7.8	5.9	5.3	5.7	6.5	13.2*	3.8
	SE	0.8	0.7	1.7	1.1	2.1	1.0	1.1	1.7	1.6	2.8	1.1
GRD 8	P	7.0	3.9*	8.8	5.6	9.4	7.7	6.4	7.3	7.5	16.6*	4.9
	SE	1.1	1.0	2.5	1.5	2.6	1.5	1.4	2.3	1.9	3.7	1.6
AGE 17	P	14.5	12.6	12.4	14.7	17.8	17.4*	11.7*	13.1	17.9*	15.1	13.2
	SE	1.1	2.4	2.3	1.5	2.6	1.9	1.0	2.3	1.6	5.3	1.7
GRD 11	P	15.3	12.8	12.5	15.2	20.7*	19.2*	11.9*	11.8	19.1	19.7	14.5
	SE	1.2	1.7	2.6	1.9	2.9	2.1	1.3	2.3	2.1	6.8	1.8

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 50% OR 50

20 = OTHER

21 = .50, 5/10, 1/2 OR EQUIVALENT

22 = ATTEMPTED $60\overline{)30}$ WITH NO OR WRONG ANSWER OTHER THAN CATEGORY 21

23 = 200%, 200, 20, 2 OR ATTEMPTED $30\overline{)60}$

24 = 5%, 5 OR ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 11 OR 21

25 = 30% OR 30

26 = 18 OR ATTEMPTED 60 X .3, 30 X .6 OR OTHER DECIMAL PLACEMENT

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 3

20 = OTHER

21 = 300 OR ATTEMPTED 75 X 4

22 = 30 OR ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 11, 21 OR 24

23 = 18.75 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED $4\overline{)75}$

24 = 3% OR 3/100

39 = I DON'T KNOW.

A46721K23
PART C

SCORING GUIDE: PART C

Categories are listed below.

PART C:

00 = NO RESPONSE

11 = 80

20 = OTHER

21 = ATTEMPTED $.15\overline{)12}$ OR OTHER DECIMAL PLACEMENT

22 = 180 OR ATTEMPTED 12 X 15

23 = 800, 8 OR OTHER DECIMAL PLACEMENT OTHER THAN CATEGORY 11 OR 26

24 = 1.8 OR ATTEMPTED 12 X .15

25 = 13.8

26 = 80% OR 80/100

39 = I DON'T KNOW.

A46721K23
PART D

SCORING GUIDE: PART D

Categories are listed below.

PART D:

00 = NO RESPONSE

11 = 50

20 = OTHER

21 = ATTEMPTED 40 X 1.25

22 = 5000 OR ATTEMPTED 40 X 125

23 = 5 OR ATTEMPTED 40 X .125

24 = .5, 500 OR OTHER DECIMAL PLACEMENT EXCEPT CATEGORY 11, 22, 23 OR 27

25 = 3.125 OR ATTEMPTED $40\overline{)125}$ OR OTHER DECIMAL PLACEMENT

26 = .32 OR ATTEMPTED $125\overline{)40}$ OR OTHER DECIMAL PLACEMENT

27 = 50%, 50/100

39 = I DON'T KNOW.

A46721K23
PART E

SCORING GUIDE: PART E

Categories are listed below.

PART E:

00 = NO RESPONSE

11 = 5% OR 5

20 = OTHER

21 = .05 OR ATTEMPTED $120\overline{)6}$

22 = .005 OR OTHER DECIMAL PLACEMENT EXCEPT CATEGORY 11 OR 21

23 = 20 OR ATTEMPTED $6\overline{)120}$

24 = 72 OR ATTEMPTED 6 X 12 OR OTHER DECIMAL PLACEMENT

39 = I DON'T KNOW.

Release #: RA07244

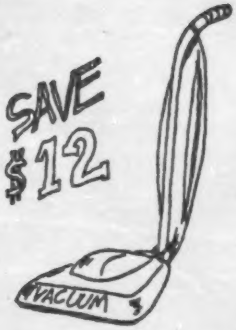
NAEP #: 5-A07244-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap:	13	17
1977-78 Package-Exercise:	08-20	01-29
Timing: (in seconds)		
Exercise Total Time	52	42

			REGION				SEX		COMMUNITY SIZE (SOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 13	P	17.7	11.5*	23.9*	16.8	19.2	19.5	15.8	15.3	22.9*	20.1	16.0
	SE	1.1	2.2	2.6	1.8	2.2	1.3	1.6	2.1	2.8	1.7	1.7
GRD 8	P	21.1	11.8*	28.3*	21.0	22.3	24.1	18.3*	18.4	27.1*	21.1	19.1
	SE	1.3	2.3	3.5	1.9	2.7	1.9	1.8	2.8	3.2	3.1	1.9
AGE 17	P	35.7	30.5*	38.1	35.5	37.9	42.3*	29.3*	37.8	36.0	45.5*	32.6*
	SE	1.5	2.7	3.6	1.8	3.7	2.2	1.7	3.8	2.2	4.1	1.9
GRD 11	P	37.2	31.3	38.1	37.7	40.9	44.7*	30.9*	39.2	37.4	48.6*	34.2
	SE	1.6	3.3	3.9	2.0	4.4	2.8	1.6	4.4	2.1	4.1	2.2



REGULAR PRICE $48.00

SALE PRICE $36.00

What is the percent of discount?

○ 12%

○ 20%

● 25%

○ $33\frac{1}{3}$%

○ 75%

○ I don't know.

Release #:	MA07611

NAEP #:	S-A07611-919-1

1977-78 Content Area:	A. Numbers and Numeration
1977-78 Objective:	1A. Recall and Recognition

Exercise Type:	Open Ended
Stimulus Type:	Tape

Overlap:	9
1977-78 Package-Exercise:	05-20

Timing: (in seconds)
Exercise Total Time	89

		REGION				SEX		COMMUNITY SIZE (DOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A											
AGE 9 P	79.8	73.5*	74.3	81.9	87.2*	78.7	80.1	73.1*	86.1*	81.6	77.8
SE	1.4	3.5	3.3	2.4	1.8	1.9	1.5	3.1	2.5	4.1	2.2
GRD 4 P	88.6	83.8	83.0	90.4	94.9*	88.4	88.8	81.0*	93.9*	91.9	87.6
SE	1.2	3.3	3.2	1.4	1.0	1.5	1.3	3.0	1.6	2.8	2.1
PART B											
AGE 9 P	87.8	82.5*	86.0	90.9*	91.1*	86.2*	89.5*	85.3	90.9	87.5	87.2
SE	1.1	2.7	2.5	1.6	1.7	1.4	1.2	2.4	2.4	3.0	1.8
GRD 4 P	94.5	90.9	94.0	96.2	96.3	94.9	94.1	92.4	95.3	97.4	94.4
SE	0.8	2.2	1.3	1.1	1.3	0.9	0.9	2.0	1.7	1.3	1.1
PART C											
AGE 9 P	55.8	46.6*	47.4*	59.3	68.8*	55.0	56.6	54.0	64.6*	60.9*	49.7*
SE	1.8	4.2	3.1	2.8	3.4	2.0	2.2	4.3	2.9	3.7	3.0
GRD 4 P	70.2	61.0*	62.1	76.7*	78.4*	71.3	69.1	64.9	79.3*	84.1*	64.6
SE	2.3	3.8	5.7	3.4	3.9	2.4	2.8	4.3	3.4	2.1	3.6
PART D											
AGE 9 P	69.2	58.9*	63.8*	73.8	80.2*	68.0	70.6	63.3	80.4*	75.2	64.6*
SE	1.6	5.0	2.1	1.9	2.3	1.9	1.7	3.9	2.3	6.1	2.8
GRD 4 P	82.6	74.5*	77.7	87.5*	88.8*	82.3	83.0	75.1*	91.3*	87.7	79.8
SE	1.6	4.1	3.3	2.0	2.3	1.8	1.7	3.4	1.7	4.3	2.6
PART E											
AGE 9 P	62.5	51.9*	56.6	66.1	74.4*	59.0*	66.1*	59.8	74.4*	70.8	56.1*
SE	1.9	4.8	3.6	2.5	3.0	2.3	2.2	4.0	2.1	6.6	2.7
GRD 4 P	75.4	66.1*	70.4	78.9	83.8*	72.4	78.2	70.9	85.7*	82.4	70.1
SE	1.9	4.8	4.1	2.4	3.0	2.8	2.1	3.5	2.4	5.2	2.9
PART F											
AGE 9 P	45.4	39.3	37.6*	49.2	54.7*	43.5	47.4	43.6	52.2*	48.0	42.1
SE	1.8	3.8	3.1	3.6	3.0	2.3	2.1	4.7	3.2	4.3	2.7
GRD 4 P	57.5	50.9	49.7	64.8	62.8	56.8	58.3	52.8	63.2	59.0	55.9
SE	2.3	3.9	5.1	4.5	4.2	2.8	2.6	5.1	4.2	5.4	3.3

Six simple multiplication problems will be read to you. Write only the ANSWERS in the spaces provided.

A. ____________ 3 X 4 ____________

B. ____________ 6 X 3 ____________

C. ____________ 9 X 8 ____________

D. ____________ 6 X 9 ____________

E. ____________ 9 X 3 ____________

F. ____________ 8 X 6 ____________

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 12

20 = OTHER

21 = 3 X 4

22 = 7

23 = +1 OR -1

24 = 9 OR 15

25 = 8 OR 16

26 = 34

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 6

20 = OTHER

21 = 6 X 1

22 = 7

23 = +5 OR -5

24 = 0 OR 12

25 = NOT USED

26 = 61

39 = I DON'T KNOW.

SCORING GUIDE: PARTS C & D

Categories are listed below.

PART C:

00 = NO RESPONSE

11 = 72

20 = OTHER

21 = 9 X 8

22 = 17

23 = +1 OR -1

24 = 63 OR 81

25 = 64 OR 80

26 = 98

39 = I DON'T KNOW.

PART D:

00 = NO RESPONSE

11 = 45

20 = OTHER

21 = 5 X 9

22 = 14

23 = +4 OR -4

24 = 40 OR 50

25 = 36 OR 54

26 = 59

39 = I DON'T KNOW.

SCORING GUIDE: PART E

Categories are listed below.

PART E:

00 = NO RESPONSE

11 = 27

20 = OTHER

21 = 9 X 3

22 = 12

23 = +6 OR -6

24 = 18 OR 36

25 = 24 OR 30

26 = 93

27 = 3

39 = I DON'T KNOW.

SCORING GUIDE: PART F

Categories are listed below.

PART F:

00 = NO RESPONSE

11 = 64

20 = OTHER

21 = 8 X 8

22 = 16

23 = 0

24 = 56 OR 72

25 = NOT USED

26 = 88

27 = 1

39 = I DON'T KNOW.

Release #: RA08131

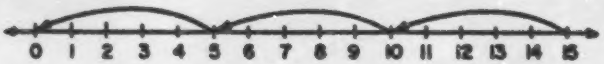
NAEP #: S-A08131-919-12

1977-78 Content Area: 1. Numbers and Numeration
1977-78 Objective: 3A. Translation

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Graph

	9	13
Overlap: 1977-78 Package-Exercise:	05-22	04-07
Timing: (in seconds) Exercise Total Time	39	24

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	22.4	16.4*	15.1*	30.2*	26.8	23.3	21.5	22.9	30.8*	18.5	18.7*
	SE	1.7	3.3	2.9	3.6	3.0	1.9	2.0	3.2	3.6	3.3	2.2
GRD 4	P	26.8	20.7	19.3*	34.3*	31.1	28.6	25.0	27.0	36.6*	20.5	22.5*
	SE	2.3	4.1	4.0	3.9	3.2	2.4	2.3	3.7	3.9	3.8	2.6
AGE 13	P	24.0	18.7	17.7*	29.2	30.3*	25.2	22.8	25.1	26.1	23.1	22.7
	SE	1.6	2.7	1.9	3.8	3.2	1.8	2.1	3.3	2.8	3.4	2.5
GRD 8	P	26.6	23.5	19.7*	30.5	31.9	28.0	25.2	27.3	27.7	23.7	26.0
	SE	1.8	3.1	2.9	4.1	3.4	2.5	2.3	3.3	3.3	1.8	3.0



Write the division sentence shown by the arrows on this number line.

ANSWER ____÷____=____

A08131-12

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 15 DIVIDED BY 3 = 5 OR 15 DIVIDED BY 5 = 3

20 = OTHER

21 = 3 X 5 = 15 OR 5 X 3 = 15

22 = 5 DIVIDED BY 3 = 15 OR 3 DIVIDED BY 5 = 15

23 = WROTE SOMETHING INVOLVING 15, 10, AND 5; E.G., 10 DIVIDED BY 5 = 15, 5 DIVIDED BY 10 = 15 OR 15 DIVIDED BY 10 = 5

24 = 3 DIVIDED BY 15 = 5 OR 5 DIVIDED BY 15 = 3

39 = I DON'T KNOW.

Release #: RA40343

NAEP #: 5-A40343-919-2

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4B. Non-routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 13
1977-78 Package-Exercise: 10-21

Timing: (in seconds)
Exercise Total Time 49

			REGION				SEX		COMMUNITY SIZE (SOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 13	P	28.9	23.1*	24.2	30.7	36.9*	27.6	30.0	24.4	31.7	33.9	28.4
	SE	1.5	2.5	2.8	2.3	3.6	1.8	1.9	2.6	2.9	5.8	2.2
GRD 8	P	34.3	29.1	27.8*	38.8	39.5	33.5	35.0	31.9	34.6	41.2	33.5
	SE	1.8	3.2	2.8	2.7	4.3	2.5	2.1	2.9	2.7	6.9	2.5

A man has 1310 baseballs to pack in boxes which hold 24 baseballs each. How many baseballs will be left over after the man has filled as many boxes as he can?

ANSWER ________________

A40343-2

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 14

20 = OTHER

21 = 54 7/12, 54 R 14, 55, 54.5, 54.583 OR ATTEMPTED $24\overline{)1310}$

22 = 7/12, .58$\bar{3}$ OR EQUIVALENT

23 = 1286, 1334 OR ATTEMPTED 1310 - 24 OR 1310 + 24

24 = COMPLETED DIVISION AND TRANSFERRED REMAINDER ONLY TO ANSWER LINE EXCEPT CATEGORY 11

39 = I DON'T KNOW.

Release #: RA08343E

NAEP #: S-A08343E919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4B. Non-routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Calculator

Overlap: 1977-78 Package-Exercise:	13 11-14	17 12-17
Timing: (in seconds) Exercise Total Time	50	40

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 13	P	5.9	5.4	5.2	6.3	6.9	6.7	5.2	6.3	7.7	13.7*	3.6*
	SE	0.8	1.4	1.3	1.4	2.5	1.3	0.9	1.8	1.5	3.3	0.9
GRD 8	P	7.5	6.2	7.2	8.4	8.1	9.0	6.3	8.3	9.3	18.3*	4.2*
	SE	1.1	1.8	1.8	2.0	3.0	1.8	1.2	2.3	1.9	3.0	1.1
AGE 17	P	19.3	15.8	19.8	19.5	22.1	20.9	17.8	17.8	20.5	26.6*	18.4
	SE	1.4	2.2	3.1	1.6	3.8	1.9	1.6	3.0	2.2	3.7	2.0
GRD 11	P	21.1	15.4*	23.4	19.9	25.0	22.9	19.5	19.1	23.1	30.4	19.8
	SE	1.6	1.5	3.9	1.8	4.9	2.0	1.9	3.3	2.8	6.3	2.1

A man has 1310 baseballs to pack in boxes which hold 24 baseballs each. How many baseballs will be left over after the man has filled as many boxes as he can?

ANSWER ____________________

A08343E23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 14

20 = OTHER

21 = 54 7/12, 54 R 14, 55, 54.5, 54.583 OR ATTEMPTED $24\overline{)1310}$

22 = 7/12, $.58\overline{3}$ OR EQUIVALENT

23 = 1286, 1334 OR ATTEMPTED 1310 - 24 OR 1310 + 24

24 = COMPLETED DIVISION AND TRANSFERRED REMAINDER ONLY TO ANSWER LINE EXCEPT CATEGORY 11

39 = I DON'T KNOW.

Release #: RA50292

NAEP #: S-A50292-919-2

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 13
1977-78 Package-Exercise: 09-21

Timing: (in seconds)
Exercise Total Time 85

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A												
AGE 13	P	48.3	42.8	38.4*	53.0	56.3*	46.7	50.1	45.0	49.1	51.2	49.2
	SE	1.9	3.9	3.7	3.2	3.9	2.1	2.6	3.2	4.6	6.7	3.0
GRD 8	P	52.7	45.9	41.0*	58.3	60.9*	51.6	54.0	49.2	50.3	54.8	53.6
	SE	2.1	4.6	4.9	3.5	4.1	2.3	2.6	3.7	4.8	9.3	3.5
PART B												
AGE 13	P	54.2	49.0*	45.0*	61.1*	59.3	51.9*	56.7*	51.2	57.5	59.9	53.1
	SE	1.5	2.3	3.4	3.3	2.9	1.7	2.0	2.9	2.8	4.4	3.1
GRD 8	P	59.8	50.9*	51.0*	66.6*	65.1	59.5	59.2	55.7	63.5	68.6	57.1
	SE	1.6	2.5	3.9	2.9	3.4	1.9	2.3	2.5	2.7	5.9	2.9

For the following questions, select the values for ☐ from this set:

{1, 3, 5, 7}

A. If 3 + ☐ > 5 + 1, then ☐ can be equal to which of the following?

- ○ 3 only
- ○ 5 only
- ● 5 or 7
- ○ 7 only
- ○ None of them

- ○ I don't know.

B. If 3 + ☐ > 5 + 5, then ☐ can be equal to which of the following?

- ○ 3 only
- ○ 5 only
- ○ 5 or 7
- ○ 7 only
- ● None of them

- ○ I don't know.

Release #: RA51032E

NAEP #: S-B22001E919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Calculator

	13	17
Overlap: 1977-78 Package-Exercise:	11-23	12-25
Timing: (in seconds) Exercise Total Time	106	103

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MDCT	SMPL
AGE 13	P	2.3	1.6	1.7	3.7	1.9	3.1*	1.6*	2.2	3.3	8.6*	0.0*
	SE	0.4	0.6	0.6	1.2	0.5	0.6	0.5	0.7	0.8	3.3	0.3
GRD 8	P	2.7	2.1	1.9	4.0	2.5	3.7	1.8*	2.7	3.5	10.2*	0.8*
	SE	0.5	0.8	0.8	1.5	0.7	0.9	0.6	0.9	0.9	4.0	0.3
AGE 17	P	13.2	12.2	8.6*	16.7*	14.2	17.0*	9.3*	12.0	16.9*	14.0	11.7
	SE	1.1	3.2	1.9	1.8	2.1	1.8	1.1	1.9	1.9	3.2	2.1
GRD 11	P	14.1	13.3	8.4*	17.8*	15.7	19.2*	9.7*	13.4	17.5	18.0	12.2
	SE	1.2	2.5	1.9	2.0	2.6	2.1	1.2	2.3	2.0	4.1	2.0

Arrange the following fractions from the SMALLEST to the LARGEST.

$\frac{5}{8}, \frac{3}{10}, \frac{3}{5}, \frac{1}{4}, \frac{2}{3}, \frac{1}{2}$

Smallest Fraction ___ ___ ___ ___ ___ ___ **Largest Fraction**

A51032E23
B22001E23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 1/4, 3/10, 1/2, 3/5, 5/8, 2/3

20 = OTHER, ONE OR MORE NUMBERS MISSING OR COPIED WRONG

21 = DESCENDING DENOMINATORS
3/10, 5/8, 3/5, 1/4, 2/3, 1/2

22 = ASCENDING DENOMINATORS
1/2, 2/3, 1/4, 3/5, 5/8, 3/10

23 = 3/10 FIRST + ANY ARRANGEMENT OF ALL FRACTIONS OTHER THAN CATEGORY 21 OR 24

24 = RIGHT ORDER (CATEGORY 11) BUT ANY TWO CONSECUTIVE FRACTIONS OUT OF SEQUENCE

25 = DESCENDING NUMERATORS
5/8, 3/10, 3/5, 2/3, 1/2, 1/4;
5/8, 3/5, 3/10, 2/3, 1/4, 1/2;
5/8, 3/10, 3/5, 2/3, 1/4, 1/2 OR
5/8, 3/5, 3/10, 2/3, 1/2, 1/4

26 = ASCENDING NUMERATORS
1/4, 1/2, 2/3, 3/10, 3/5, 5/8;
1/2, 1/4, 2/3, 3/5, 3/10, 5/8;
1/2, 1/4, 2/3, 3/10, 3/5, 5/8 OR
1/4, 1/2, 2/3, 3/5, 3/10, 5/8

39 = I DON'T KNOW.

Release #: RA51511

NAEP #: 5-A51511-919-12

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 1A. Recall and Recognition

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{9}{05\text{-}23}$ $\frac{13}{02\text{-}22}$

Timing: (in seconds)
Exercise Total Time 33 23

			REGION				SEX		COMMUNITY SIZE (SOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTI	SMPL
PART A											
AGE 9 P	43.0	36.3*	40.4	46.9	47.7	42.9	43.2	40.2	50.7*	41.7	40.3*
SE	1.6	3.2	2.2	2.2	4.5	2.2	2.0	1.8	2.5	4.2	2.3
GRD 4 P	45.1	38.9	42.0	49.1	48.8	45.6	44.5	42.3	55.1*	40.6	41.4
SE	1.9	3.9	2.8	2.6	4.9	2.9	2.1	. 2.5	2.8	5.9	2.8
AGE 13 P	67.2	66.3	64.4	69.1	68.5	65.1	69.4	62.2*	73.8*	74.7	64.7
SE	1.5	3.2	2.5	2.5	3.4	2.1	1.6	2.4	2.9	3.9	2.0
GRD 8 P	71.3	69.7	65.0*	76.6*	73.0	69.2	73.4	66.5	76.9*	83.4*	67.8
SE	1.8	3.8	2.5	2.8	4.5	2.5	1.9	2.7	2.6	5.4	2.4
PART B											
AGE 9 P	80.9	78.1	74.6*	83.8*	86.5*	78.1*	83.7*	79.1	83.6	87.2*	79.0
SE	1.1	2.6	2.5	1.3	1.0	1.3	1.5	2.0	2.0	2.3	1.7
GRD 4 P	87.8	84.5	84.3	90.2	91.4*	86.7	88.9	86.8	90.6	93.5*	85.8
SE	1.1	2.7	3.0	1.5	1.5	1.5	1.5	1.8	1.7	2.0	1.9
AGE 13 P	95.9	93.4	94.5	96.5	99.0*	94.1*	97.8*	92.2*	98.3*	99.2*	95.9
SE	0.6	1.5	1.3	1.0	0.4	0.9	0.5	1.5	0.7	0.5	1.0
GRD 8 P	98.1	96.6	97.0	98.7	99.6*	97.2	99.0	96.9	98.7	100.0*	97.9
SE	0.4	1.2	0.9	0.5	0.2	0.5	0.4	0.8	0.6	0.0	0.7

What does each of the following symbols mean? Fill in one oval in each box.

	Equal	Less Than	Greater Than	I don't know.
A. <	○	●	○	○
B. =	●	○	○	○

Release #: RA51633

NAEP #: S-A51632-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap:
1977-78 Package-Exercise: $\frac{13}{03\text{-}11}$ $\frac{17}{03\text{-}09}$

Timing: (in seconds)
Exercise Total Time 39 36

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 13	P	36.0	33.7	37.2	36.3	36.7	36.2	35.9	41.0*	38.4	35.7	31.8*
	SE	1.4	3.5	3.5	2.4	1.7	1.6	1.8	2.9	2.9	3.6	1.9
GRD 8	P	40.3	39.7	41.4	41.4	38.0	39.8	40.8	49.2*	40.3	37.6	36.3
	SE	1.6	3.7	3.9	3.6	2.1	1.9	2.3	3.4	3.5	2.2	2.4
AGE 17	P	61.1	55.1*	56.8	66.1*	63.9	58.8	63.3	57.1	66.5*	72.1*	59.1
	SE	1.5	3.2	3.4	2.9	2.7	1.8	2.1	3.4	3.1	4.3	2.5
GRD 11	P	66.5	63.6	61.7	69.9	66.5	64.6	67.1	61.1	70.3	81.1*	64.6
	SE	1.7	2.4	3.8	3.6	2.9	2.1	2.2	3.4	3.6	4.1	2.5

$\square \times \triangle < \square + \triangle$

Which one of the following will make this number sentence TRUE?

● 1 in the □ and 2 in the △
○ 2 in the □ and 3 in the △
○ 3 in the □ and 4 in the △

○ I don't know.

Release #: RA52543

NAEP #: 5-A52543-919-3

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4B. Non-routine Problems

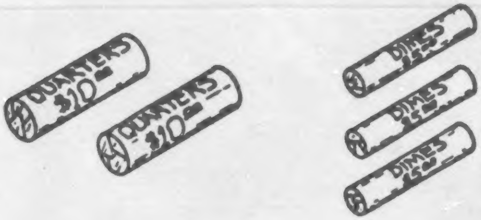
Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap: 17
1977-78 Package-Exercise: 05-17

Timing: (in seconds)
Exercise Total Time 88

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 17	P	42.8	41.1	41.4	44.2	42.3	46.2*	38.8*	40.5	44.3	34.5	44.0
	SE	1.5	2.6	3.1	2.7	3.4	2.2	1.9	2.4	3.5	4.3	2.2
GRD 11	P	43.4	42.0	42.8	47.2	40.2	47.9*	39.5*	41.0	44.4	34.8*	45.5
	SE	1.5	3.0	3.6	2.8	2.6	2.4	1.9	2.5	4.9	3.7	1.9

Juan's mother has three five-dollar rolls of dimes and two ten-dollar rolls of quarters to use for Juan's school lunch.



If Juan takes exactly forty-five cents to school every day for his lunch, which of the following statements is true?

○ He uses all of the quarters before all of the dimes.

● He uses all of the dimes before all of the quarters.

○ He spends all of both coins at the same time.

○ I don't know.

Release #: NA52723

NAEP #: 5-A52723-919-3

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2C. Graphs and Tables

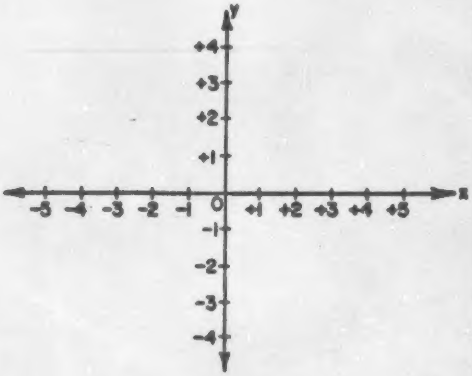
Exercise Type: Open Ended
Stimulus Type: Text/Tape/Graph

Overlap:
1977-78 Package-Exercise: $\frac{17}{06-19}$

Timing: (in seconds)
Exercise Total Time 56

			REGION				SEX		COMMUNITY SIZE (TOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 17	P	7.2	3.1*	5.7	8.9	9.6	9.2*	5.2*	5.4	11.5*	19.0	4.3*
	SE	0.8	1.0	1.4	1.5	1.6	1.1	0.7	1.4	1.7	6.9	0.8
GRD 11	P	8.2	3.9*	7.6	10.8	9.7	10.9*	5.9*	6.1	13.0*	21.0*	4.9*
	SE	1.0	1.5	2.0	1.8	2.1	1.4	0.9	1.6	2.2	6.3	1.1

Graph all ordered pairs (x, y) where x and y are real numbers and where $y \leq 2x + 1$.



SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

	Y-INTERCEPT	SLOPE	SHADING	LINE (STRAIGHT)
11 =	0,1	2	BELOW	SOLID
20 =	OTHER (E.G., MORE THAN ONE LINE)			
21 =	0,1	2	ABOVE OR NONE	SOLID OR BROKEN
22 =	0,1	NOT 2	BELOW	SOLID OR BROKEN
23 =	0,1	2	BELOW	BROKEN OR POINTS PLOTTED, BUT NO LINE DRAWN
24 =	0,1	NOT 2	ABOVE OR NONE	SOLID OR BROKEN
25 =	NOT 0,1	NOT 2	BELOW	SOLID OR BROKEN
26 =	NOT 0,1	2	BELOW, ABOVE OR NONE	SOLID OR BROKEN
27 =	NOT 0,1	NOT 2	ABOVE OR NONE	SOLID OR BROKEN

28 = GRAPHED POINTS ON CORRECT LINE, BUT NO LINE DRAWN AND NO SHADING OR SHADING ABOVE THE POINTS

29 = GRAPHED ONE OR MORE POINTS, NO LINE DRAWN (EXCEPT CATEGORY 28)

39 = I DON'T KNOW.

IF A VERTICAL LINE IS DRAWN, SHADING TO THE RIGHT WILL BE CONSIDERED ABOVE, SHADING TO THE LEFT WILL BE CONSIDERED BELOW.

IF POINTS ARE PLOTTED AND THERE IS SHADING, BUT NO LINE IS DRAWN CONNECTING THE POINTS, WE WILL SCORE IT AS A BROKEN LINE.

Release #: RA53032

NAEP #: S-A53032-919-33

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap:
1977-78 Package-Exercise: 13 / 08-41 17 / 09-34

Timing: (in seconds)
Exercise Total Time 20 15

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 13	P	50.6	40.1*	48.9	54.0	57.0*	50.8	50.4	48.2	57.9*	55.3	47.6
	SE	1.6	3.3	3.7	2.7	2.5	2.0	1.9	3.1	3.3	3.5	2.7
GRD 8	P	57.0	42.5*	56.0	66.0*	63.6	58.5	57.1	52.7	64.3*	63.0	55.7
	SE	1.9	4.3	4.4	2.8	3.2	2.6	2.2	3.4	3.5	6.6	3.4
AGE 17	P	78.5	69.2*	76.2	81.0	83.0*	78.8	78.1	71.6*	80.2	86.7	79.0
	SE	1.2	2.5	1.5	2.3	2.8	1.7	1.5	2.7	2.8	5.2	1.6
GRD 11	P	81.8	75.2*	80.3	83.7	85.6	83.1	80.7	75.3*	83.5	92.5*	81.6
	SE	1.3	2.6	2.8	2.2	2.7	1.8	1.5	2.7	2.4	3.3	1.8

$-10 \bigcirc -5$

Which symbol can be put in the circle to make the number sentence true?

○ >

● <

○ =

○ I don't know.

Release #: 0A60021

NAEP #: S-A60021-919-123

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{9}{04-25}$ $\frac{13}{08-16}$ $\frac{17}{09-16}$

Timing: (in seconds)
Exercise Total Time 131 104 93

			REGION				SEX		COMMUNITY SIZE (SOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A												
AGE 9	P	79.1	75.6	75.9	77.6	87.8*	75.4*	82.8*	76.3	85.0*	80.5	77.3
	SE	1.4	3.8	2.5	2.6	2.0	2.3	1.3	2.5	2.7	3.4	2.5
GRD 4	P	87.4	84.8	85.6	86.6	92.4*	85.1	89.6	85.9	90.2	87.3	86.8
	SE	1.1	2.0	2.4	2.1	1.6	1.5	1.3	1.9	2.7	3.5	1.5
AGE 13	P	91.3	89.6	88.9	92.2	94.2*	90.3	92.1	89.7	93.4*	93.9	90.7
	SE	0.8	1.8	1.5	1.4	.3	1.0	1.1	1.7	0.9	1.6	1.2
GRD 8	P	93.6	93.2	91.5	94.5	95.1	92.5	94.6	91.7	94.3	95.2	94.0
	SE	0.7	1.9	1.5	1.2	1.1	1.1	0.8	1.7	1.0	1.1	1.1
AGE 17	P	96.0	94.6	95.9	96.9	96.0	96.4	95.6	94.0	97.7*	93.5	96.4
	SE	0.4	1.2	0.9	0.6	0.7	0.5	0.6	1.1	0.5	1.9	0.6
GRD 11	P	96.7	95.4	96.3	97.0	97.5	97.2	96.2	95.4	98.5*	94.6	96.5
	SE	0.5	1.4	1.0	0.6	1.0	0.7	0.6	1.3	0.6	2.5	0.6
PART B												
AGE 9	P	34.5	26.0*	31.8	35.5	44.9*	33.4	35.7	28.9*	42.2	29.3	34.9
	SE	1.8	4.0	3.7	3.5	2.6	2.4	2.1	3.2	4.5	5.5	2.8
GRD 4	P	40.1	29.2*	40.1	43.0	47.3	39.4	40.7	31.1*	49.0*	30.8	41.6
	SE	2.2	4.0	4.9	4.7	4.1	2.8	2.6	4.2	4.5	5.2	3.3
AGE 13	P	49.0	38.0*	48.0	54.8*	53.0	52.0*	45.9*	45.5	62.0*	52.7	44.1*
	SE	1.2	2.4	2.1	2.2	2.7	1.4	1.8	2.9	2.7	5.8	1.8
GRD 8	P	53.7	42.0*	51.5	61.7*	57.0	57.4*	50.2*	51.9	66.6*	56.8	46.6*
	SE	1.5	3.6	2.3	2.8	3.6	2.0	2.0	3.3	3.2	6.3	2.2
AGE 17	P	67.3	59.2*	66.0	70.2	71.8	69.4	65.3	60.0*	68.9	75.0*	68.1
	SE	1.4	2.3	1.8	3.4	2.3	1.8	1.8	3.3	2.7	2.8	1.7
GRD 11	P	71.9	69.2	69.6	72.5	75.7	76.2*	68.2*	65.7*	71.8	85.0*	72.0
	SE	1.4	1.9	2.7	3.1	2.6	2.0	1.9	3.3	2.8	2.1	1.7
PART C												
AGE 9	P	5.2	3.9	6.7	3.9	6.5	4.4	5.9	3.3	6.4	2.7	6.0
	SE	0.8	1.5	2.3	1.0	2.1	0.8	1.3	1.0	2.2	1.7	1.4
GRD 4	P	6.7	4.5	8.7	5.7	8.0	5.8	7.5	4.2	8.1	3.7	7.8
	SE	1.1	1.8	3.0	1.5	2.5	1.1	1.7	1.3	2.8	2.4	1.9
AGE 13	P	35.0	22.7*	36.0	35.9	45.0*	29.3*	40.9*	37.5	44.9*	43.2	27.6*
	SE	1.4	2.0	3.1	2.7	2.6	1.6	2.1	2.5	2.9	5.4	2.3
GRD 8	P	41.4	28.2*	42.8	41.9	50.4*	36.5*	45.9*	45.5	51.1*	48.4	32.2*
	SE	1.9	3.0	3.6	3.4	3.5	2.0	2.6	2.9	3.8	7.9	3.2

As the following problems are read, decide what number goes in each box. Do all the work in your head. Write only the ANSWERS in the spaces provided.

A. 3 × ☐ = 3

ANSWER ______________

B. 18 × 0 × 99 = ☐

ANSWER ______________

C. (37 × 5) × 2 = ☐

ANSWER ______________

D. 0 ÷ 1000 = ☐

ANSWER ______________

E. 8063 × 83 = ☐ × 8063

ANSWER ______________

F. (18 + 12) + 8 = ☐ + 20

ANSWER ______________

G. $\frac{3}{4}$ × ☐ = 1

ANSWER ______________

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART C												
AGE 17	P	49.5	48.6	49.5	50.1	52.7	46.4*	52.4*	46.1	51.8	62.8*	46.6
	SE	1.4	3.1	3.3	2.3	2.9	2.1	2.0	2.9	2.4	3.9	1.7
GRD 11	P	51.9	51.2	49.8	52.6	53.6	50.6	53.1	49.5	53.7	66.2*	49.0
	SE	1.5	2.8	3.2	2.2	3.6	2.2	2.1	4.1	2.2	5.1	1.8
PART D												
AGE 9	P	49.5	40.8*	43.2	53.1	60.1*	47.4	51.6	44.8	58.7*	51.0	47.1
	SE	1.9	3.8	3.8	3.5	3.0	2.4	2.3	2.7	3.4	5.7	3.3
GRD 4	P	57.4	48.1*	49.2*	65.1*	65.4*	56.3	58.5	53.1	64.4	58.3	55.7
	SE	2.0	4.0	3.4	4.4	3.1	2.4	2.7	3.3	3.9	5.2	3.3
AGE 13	P	65.6	59.0*	64.9	68.9	68.5	66.5	64.5	62.6	71.7*	73.2	62.9
	SE	1.3	3.8	2.5	2.4	1.6	1.9	.0	3.2	2.3	5.8	2.1
GRD 8	P	69.0	63.3	68.0	73.0*	70.5	69.6	68.5	67.6	72.1	78.7	66.2
	SE	1.5	4.7	3.1	1.9	2.0	2.0	2.2	3.0	2.3	5.7	2.6
AGE 17	P	76.4	73.8	70.4*	80.5*	79.3	76.5	76.4	74.0	78.4	81.5	75.3
	SE	1.2	1.6	2.3	2.0	2.7	1.3	1.8	2.9	3.1	3.1	1.5
GRD 11	P	79.6	77.4	73.1*	82.5	83.5	81.0	78.3	80.0	81.3	82.3	77.7
	SE	1.2	2.2	2.6	2.0	2.3	1.5	1.7	2.9	2.7	3.5	1.7
PART E												
AGE 9	P	20.2	16.4	12.5*	23.9	26.9	19.1	21.3	17.0	24.6	14.0	20.8
	SE	1.7	3.1	1.7	3.6	4.6	1.7	2.4	2.1	5.6	5.8	2.1
GRD 4	P	23.3	18.5	14.7*	29.6	29.1	22.0	24.6	17.4*	28.3	17.7	24.7
	SE	2.1	3.4	1.8	5.0	5.0	2.1	2.8	2.8	6.6	6.8	2.4
AGE 13	P	63.4	56.8*	58.8	67.2	70.1*	61.0*	65.9*	59.9	69.2	71.0	61.2
	SE	1.7	3.7	3.8	2.6	3.9	2.2	2.0	3.8	4.0	4.3	2.4
GRD 8	P	69.7	64.2	63.0	74.7	75.3	68.8	70.6	66.9	73.6	78.3*	67.4
	SE	2.1	4.6	4.4	2.7	4.8	2.8	2.1	3.6	5.2	3.0	3.1
AGE 17	P	76.4	72.0	71.6	82.4*	76.7	74.5	78.3	68.3*	79.9	83.2*	76.5
	SE	1.3	2.3	3.0	2.2	2.9	1.9	1.5	3.2	3.0	2.8	1.3
GRD 11	P	83.8	81.7	75.8	84.8*	79.2	79.3	82.2	74.0	83.7	88.5	80.4
	SE	1.5	2.1	3.9	2.0	3.3	2.1	1.7	3.6	2.8	4.1	1.9
PART F												
AGE 9	P	6.3	4.6	4.4	5.8	10.7*	7.1	5.5	4.8	8.9	4.9	6.1
	SE	0.7	1.1	1.0	1.1	2.1	1.1	0.8	1.1	2.5	2.3	1.1
GRD 4	P	6.9	4.2*	5.2	6.4	11.5*	7.4	6.4	4.4	9.2	5.8	7.1
	SE	0.8	1.0	1.1	1.7	2.1	1.3	1.0	1.2	2.7	3.2	1.3

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART F												
AGE 13	P	44.5	36.1*	44.4	49.6*	46.4	43.1	45.9	41.4	50.8	52.6	42.1
	SE	1.7	4.1	3.7	2.1	4.4	1.8	2.2	3.7	4.7	4.2	2.4
GRD 8	P	50.9	44.7	49.8	56.2*	51.8	50.8	51.1	48.1	53.9	57.6	45.5
	SE	2.2	5.7	4.5	2.3	4.6	2.6	2.6	4.5	4.9	3.5	3.1
AGE 17	P	65.2	59.9	59.7*	69.9*	68.8	64.8	65.6	59.4	66.3	74.9*	65.3
	SE	1.3	3.3	2.1	2.2	2.6	2.0	1.8	3.1	2.6	2.9	1.9
GRD 11	P	70.3	71.2	64.1	72.5	72.7	71.1	69.7	66.8	69.2	83.3*	73.7
	SE	1.4	2.9	3.3	1.9	3.1	2.2	2.0	3.1	2.8	2.5	2.2
PART G												
AGE 9	P	0.3	0.7	0.5	0.0*	0.0*	0.2	0.3	0.0*	0.0*	0.6	0.5
	SE	0.1	0.4	0.3	0.0	0.0	0.2	0.2	0.0	0.0	0.6	0.2
GRD 4	P	0.4	1.0	0.7	0.0*	0.0*	0.4	0.5	0.3*	0.3*	0.9	0.7
	SE	0.2	0.5	0.5	0.0	0.0	0.2	0.2	0.0	0.0	0.9	0.3
AGE 13	P	15.2	7.6*	14.3	15.2	23.8*	13.1*	17.5*	12.3	17.3	18.1	15.3
	SE	1.3	1.9	2.7	1.4	3.5*	1.1	2.0	2.0	2.1	3.5	2.5
GRD 8	P	19.3	[illegible]	18.3	18.9	28.1*	16.8	21.5	15.2	20.5	23.5	15.9
	SE	1.8	1.5	3.9	2.0	4.1	1.6	2.6	2.5	2.5	4.2	3.4
AGE 17	P	44.4	37.4*	42.7	45.5	50.7*	42.6	46.1	38.8	49.8*	57.1*	41.1
	SE	1.7	2.8	3.9	3.1	3.1	1.9	2.2	4.3	2.8	4.5	2.3
GRD 11	P	49.4	44.9	47.2	49.5	55.1	48.3	50.4	42.1	54.6*	66.4*	45.7
	SE	1.8	2.7	4.8	3.2	3.2	2.2	2.6	4.8	2.9	5.1	2.3

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 1 OR ONE

20 = OTHER

21 = 0 OR ZERO

22 = 3

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 0 OR ZERO

20 = OTHER

21 = 522

22 = 18

23 = 29

39 = I DON'T KNOW.

SCORING GUIDE: PARTS C & D

Categories are listed below.

PART C:

00 = NO RESPONSE

11 = 370

20 = OTHER

21 = 3700

39 = I DON'T KNOW.

PART D:

00 = NO RESPONSE

11 = 0 OR ZERO

20 = OTHER

21 = $\frac{1}{1000}$ OR .001

22 = 1 OR ONE

23 = 1000

24 = ∞, "INFINITY" OR "CANNOT DIVIDE BY (INTO) ZERO", "IMPOSSIBLE", ETC.

39 = I DON'T KNOW.

SCORING GUIDE: PARTS E & F

Categories are listed below.

PART E:

00 = NO RESPONSE

11 = 83

20 = OTHER

21 = 496,589 OR ATTEMPTED 5983 X 83

39 = I DON'T KNOW.

PART F:

00 = NO RESPONSE

11 = 18

20 = OTHER

21 = 30 OR ATTEMPTED 12 + 18

22 = 20 OR ATTEMPTED 12 + 8

23 = 38 OR ATTEMPTED 18 + 12 + 8

24 = 58 OR ATTEMPTED 18 + 12 + 8 + 20

39 = I DON'T KNOW.

SCORING GUIDE: PART G

Categories are listed below.

PART G:

00 = NO RESPONSE

11 = 4/3, 1 1/3 OR 1.$\overline{3}$

20 = OTHER

21 = 1/4

22 = 3/4

23 = 1

39 = I DON'T KNOW.

Release #: RA60902

NAEP #: S-A60902-919-123

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture

Overlap:
1977-78 Package-Exercise: 9/03-17 13/02-24 17/02-25

Timing: (in seconds)
Exercise Total Time 67 53 47

			REGION				SEX		COMMUNITY SIZE (SOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MDCT	SMPL
AGE 9	P	1.6	2.5	1.5	1.3	1.1	1.6	1.6	1.6	1.1	1.0	1.9
	SE	0.4	1.1	0.9	0.3	0.2	0.5	0.5	0.8	0.5	0.9	0.6
GRD 4	P	1.8	2.4	3.0	1.7	1.1	1.7	1.8	1.2	1.6	1.5	2.2
	SE	0.4	1.0	1.2	0.4	0.2	0.6	0.6	0.9	0.7	1.3	0.6
AGE 17	P	44.9	42.4	44.5	43.2	50.0	49.0*	40.9*	34.7*	51.1*	48.3	44.9
	SE	1.5	2.7	2.4	3.1	3.3	1.6	1.9	3.1	2.2	5.7	2.2
GRD 11	P	48.3	45.1	49.7	45.5	53.6	54.8*	42.4*	37.8*	53.7*	55.7	48.1
	SE	1.6	2.7	2.7	3.7	3.0	2.0	2.2	3.4	2.4	5.7	2.6
AGE 13	P	24.1	17.6*	23.7	28.1*	26.0	26.7*	21.4*	18.9*	31.1*	23.1	23.3
	SE	1.1	2.0	2.5	1.6	2.7	1.8	1.6	2.3	2.2	4.0	1.8
GRD 8	P	28.1	22.6*	29.4	32.4*	27.2	31.1	25.2	23.3	34.2*	25.9	27.3
	SE	1.2	2.6	2.5	1.8	2.8	2.3	1.9	2.7	2.6	3.2	1.6

Sarah paid $1.20 for 6 bottles of cola including the bottle deposit. If the deposit on each bottle is 5 cents what is the cost of each bottle of cola?

ANSWER ________________

A60902-123

SCORING GUIDE

Categories are listed below.

NOTE: IGNORE LABELS FOR CATEGORIES 21, 22, 23 AND 24.

00 = NO RESPONSE

11 = 15¢, 15 OR .15

20 = OTHER

21 = 20 OR .20

22 = 25, .25, $1.50, 1.50 OR 150

23 = 30, 30¢ OR .30

24 = 90, 90¢ OR .90

25 = 12.2, 131 OR OTHER DECIMAL PLACEMENT (NOT USED AT AGE 13)

26 = 6.2, 125 OR OTHER DECIMAL PLACEMENT (NOT USED AT AGE 13)

27 = 15 OR .15 WITH WRONG UNITS; E.G., $15, .15¢

39 = I DON'T KNOW.

Release #: RA60942E

NAEP #: S-A6094 2E919-1

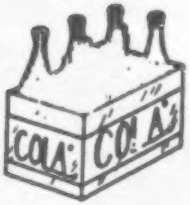
1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture/Calculator

Overlap: 9
1977-78 Package-Exercise: 07-18

Timing: (in seconds)
Exercise Total Time 72

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 9	P	0.8	0.9	0.4	0.5	1.4	0.8	0.8	0.5	0.8	3.3*	0.4
	SE	0.2	0.5	0.3	0.3	0.7	0.3	0.3	0.3	0.6	1.2	0.2
GRD 4	P	0.8	1.2	0.2*	0.7	1.2	0.9	0.7	0.4	1.0	2.9	0.6
	SE	0.3	0.7	0.2	0.5	0.8	0.4	0.4	0.3	0.7	1.8	0.3



Sarah paid $1.20 for 6 bottles of cola including the bottle deposit. If the deposit on each bottle is 5 cents what is the cost of each bottle of cola?

ANSWER ________________

A60942E1

SCORING GUIDE

Categories are listed below.

NOTE: IGNORE LABELS FOR CATEGORIES 21, 22, 23 AND 24.

00 = NO RESPONSE

11 = 15¢, 15 OR .15

20 = OTHER

21 = 20 OR .20

22 = 25, .25, $1.50, 1.50 OR 150

23 = 30, 30¢ OR .30

24 = 90, 90¢ OR .90

25 = 12.2, 131 OR OTHER DECIMAL PLACEMENT

26 = 6.2, 125 OR OTHER DECIMAL PLACEMENT

27 = 15 OR .15 WITH WRONG UNITS; E.G., $15, .15¢

39 = I DON'T KNOW.

Release #: RA70643

NAEP #: S-A70643-919-123

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4B. Non-routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape

YEAR 9 MATH PAGE 98
02/20/79

EXERCISE: A70643 NAEP NO: A70643-

			REGION				SEX		COMMUNITY SIZE (TOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PARC	NCTY	SMPL
AGE 9	P	12.0	10.1	9.3*	14.6	15.2	11.9	12.9	11.5	15.0	9.8	11.8
	SE	0.8	1.1	1.3	1.7	2.1	1.3	1.3	1.4	1.7	3.1	1.3
GRD 4	P	14.1	10.9*	10.6*	16.8	17.3	13.0	15.2	13.6	14.8	11.3	14.4
	SE	1.0	0.8	1.4	2.5	2.4	1.4	1.7	1.7	1.9	4.5	1.6
AGE 17	P	32.3	26.5*	28.5	36.0	36.9	37.3*	27.5*	28.2	36.5	24.4	33.7
	SE	1.7	2.7	3.0	4.1	2.4	2.1	2.1	3.2	4.7	4.2	1.6
GRD 11	P	34.5	27.3*	29.4	38.8	39.7	41.0*	29.0*	[illegible]	39.7	22.9*	35.9
	SE	1.9	2.6	3.1	4.3	2.5	2.2	2.3	3.9	5.3	4.1	1.6
AGE 13	P	20.0	14.2*	17.1*	23.5*	23.9*	20.6	17.4	20.0	20.7	[illegible]	[illegible]
	SE	0.9	1.5	1.1	2.3	1.6	1.2	1.2	2.3	2.0	4.6	[illegible]
GRD 8	P	21.0	17.2	17.6*	23.0	24.9*	22.1	20.0	18.0	21.2	20.7	20.5
	SE	0.9	1.9	1.3	2.2	1.9	1.5	1.4	1.8	1.9	4.1	1.7

Right now Bob has $12 in the bank and Carol has $26 in the bank. From now on each will save $1 every week. How much money will Bob have saved when he has half as much as Carol?

ANSWER ________________

A70643-123

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = $14, 14, METHOD OTHER THAN CATEGORY 12

12 = $14 WITH A TABLE B | C
12 | 26
13 | 27
14 | 28
MUST HAVE 2 SETS OF NUMBERS IN TABLE OR

$14 WITH EQUATION(S): 2(12 + X) = 26 + X, 2X = X + 14 OR
2X = 26 + Y AND X = 12 + Y

20 = OTHER

21 = "DON'T HAPPEN" OR "NEVER HAPPEN"

22 = $13, 13, $1.00 OR 1

23 = WROTE A CORRECT EQUATION, PAIR OF EQUATIONS OR TABLE, BUT WITH NO OR WRONG ANSWER

24 = 38, 39 OR ATTEMPTED 12 + 26 OR 12 + 26 + 1 (NOT USED AT AGE 13)

25 = 2 OR $2.00

39 = I DON'T KNOW.

Release #: RA70943

NAEP #: 5-A70943-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4B. Non-routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{13}{06\text{-}29}$ $\frac{17}{06\text{-}13}$

Timing: (in seconds)
Exercise Total Time 45 60

			REGION				SEX		COMMUNITY SIZE (SOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MDCT	SMPL
AGE 13	P	2.6	2.7	2.7	2.0	3.1	2.6	2.6	3.0	2.6	2.3	2.4
	SE	0.4	0.7	0.9	0.6	0.8	0.6	0.5	1.0	1.0	1.8	0.4
GRD 8	P	3.0	2.6	3.8	1.6*	3.8	3.4	2.5	3.5	3.4	2.5	2.5
	SE	0.5	0.8	1.4	0.7	1.0	0.8	0.6	1.3	1.3	1.8	0.6
AGE 17	P	7.6	4.5*	7.2	9.4	8.1	7.6	7.6	7.9	8.9	3.1*	7.1
	SE	0.7	1.5	1.4	1.1	1.9	0.8	1.1	2.2	1.3	2.0	1.1
GRD 11	P	8.3	4.0*	7.3	10.5*	9.7	8.9	7.8	7.9	9.0	3.8	8.4
	SE	0.8	1.3	1.6	1.0	2.1	1.0	1.2	2.5	1.5	2.4	1.3

The roof and the body of a car are to be painted different colors. Using only 5 colors, how many different ways can the car be painted?

ANSWER ____________

A70943-23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 20 OR 20 WAYS

20 = OTHER

21 = 10 OR ATTEMPTED 2 X 5

22 = 25, 5^2 OR ATTEMPTED 5 X 5

23 = 5

24 = 2

25 = 9

26 = $\binom{5}{2}$, C^{5}_{2}, $\frac{5 \times 4 \times 3 \times 2 \times 1}{(2 \times 1)(3 \times 2 \times 1)}$ OR $\frac{5!}{2!\,3!}$

27 = ATTEMPTED 4 X 5 WITH NO OR WRONG ANSWER

28 = $(5)_2$, $\frac{5!}{3!}$, $\frac{5 \times 4 \times 3 \times 2 \times 1}{3 \times 2 \times 1}$ OR P^{5}_{2}

39 = I DON'T KNOW.

Release #: RA71043

NAEP #: S-A71043-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: *B. Non-routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 13 / 07-12 17 / 07-18

Timing: (in seconds)
Exercise Total Time 61 46

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 13	P	20.4	15.3*	18.7	23.3	24.2	19.2	21.7	20.9	25.3*	20.4	17.8
	SE	1.3	2.7	2.1	1.5	3.9	1.6	1.7	2.8	2.3	5.8	2.2
GRD 8	P	24.7	19.2*	22.7	27.6	28.7	24.8	24.6	26.7	27.4	24.1	22.1
	SE	1.5	2.8	2.7	2.1	4.3	2.0	1.9	3.3	2.1	6.6	2.8
AGE 17	P	37.3	30.2*	35.9	42.7*	37.8	40.1*	34.7*	36.6	41.0	32.2	36.6
	SE	1.3	3.1	2.8	1.7	2.8	1.8	1.7	2.2	2.6	7.0	1.6
GRD 11	P	38.4	33.8	35.7	43.3*	38.4	41.4	35.8	40.8	39.9	33.1	37.4
	SE	1.5	3.4	4.4	1.4	3.0	2.3	2.0	2.7	2.6	6.6	2.1

Maria left at noon to take a trip on her bicycle. She rode 5 miles each hour. Later that afternoon, Amanda decided to go after her. Amanda rode 10 miles each hour.

What else would you need to know in order to find how far the girls rode before Amanda caught Maria?

ANSWER ______________________________

____

____

A71043-23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = WHEN AMANDA LEFT

20 = OTHER

21 = RESTATES QUESTION (HOW FAR MARIA OR AMANDA RODE)

22 = WHEN MARIA LEFT

23 = TAKES DIFFERENCE BETWEEN 10 MPH AND 5 MPH, 5, 10 - 5 OR "SHE WOULD HAVE TO RIDE FIVE MILES TO CATCH UP"

24 = POSSIBLE OPERATIONS TO USE ARE GIVEN SUCH AS DIVISION AND MULTIPLICATION, DO YOU HAVE TO TAKE AWAY, TIMES TABLE, OR PLUS

25 = ANY ANSWER WITH NUMBERS OTHER THAN 5 OR (10 - 5) SUCH AS 5 X 10, 50, 10 + 5, 15, 10/5 OR 2

26 = HOW LONG MARIA (AMANDA) RODE

39 = I DON'T KNOW.

Release #: RA03442

NAEP #: S-A00442-919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 13/05-17 17/02-23

Timing: (in seconds)
Exercise Total Time 58 48

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FRNC	MDCT	SMPL
AGE 13	P	27.1	16.4*	28.5	28.5	33.7*	33.0*	21.3*	23.7	32.7*	30.3	24.6
	SE	1.3	2.3	2.8	2.7	2.0	1.8	1.6	3.6	2.9	5.5	2.4
GRD 8	P	32.9	21.9*	34.5	30.9	37.8*	41.6*	25.3*	39.9	38.3	41.2*	29.9
	SE	1.3	3.3	2.6	2.8	2.2	2.0	1.8	4.1	3.4	3.9	2.6
AGE 17	P	49.9	45.0	45.3*	53.5	54.4	56.5*	43.5*	41.6*	60.1*	51.9	46.8
	SE	1.4	2.7	1.5	3.3	2.8	1.9	1.8	3.4	2.2	3.0	2.0
GRD 11	P	53.3	49.7	49.0*	57.5	55.4	63.6*	44.1*	46.0*	62.5*	54.5	50.6
	SE	1.6	3.4	1.7	3.6	2.9	2.2	2.2	3.5	2.7	3.8	2.4

Jerry's team won 3 out of 9 games. Joe's team won 1 out of 9 games. If both teams continue to win at this rate, and each team plays a total of 36 games in the season, how many more games will Jerry's team win than Joe's team?

ANSWER ____________

A00442-23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 8

20 = OTHER

21 = 2 OR ATTEMPTED 3 - 1

22 = 3

23 = 9

24 = 12

25 = ATTEMPTED (3 - 1)4 WITH NO OR WRONG ANSWER

39 = I DON'T KNOW.

Release #: 0A92944

NAEP #: 5-A92944-919-3

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: A1. Routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 17 / 04-34

Timing: (in seconds)
Exercise Total Time 58

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17	P	32.8	27.8*	32.7	34.7	34.7	37.9*	28.3*	28.8	39.5*	34.2	31.2
	SE	1.4	2.1	2.2	3.3	2.7	2.3	1.7	4.1	2.7	2.5	1.5
GRD 11	P	35.0	22.5	33.7	36.5	36.0	41.2*	29.7*	29.7	40.3*	41.8	34.1
	SE	1.5	2.7	1.9	3.4	3.1	2.7	1.8	4.7	2.8	4.4	1.6

Jerry bought an old Ford for $900.00. He paid $200.00 down and borrowed the rest. The total finance charge was 10% of the loan. He paid off the loan and finance charge in 10 equal installments. How much was each installment?

ANSWER ________________

A92944-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = [illegible]7 OR 77

20 = OTHER

21 = 700, $700.00 OR ATTEMPTED 900 - 200

22 = 70, $70.00 OR ATTEMPTED (900 - 200) DIVIDED BY 10
OR 700 X .1

23 = ANY DECIMAL OF 7 EXCEPT CATEGORIES 21 AND 22

24 = ANY DECIMAL OF 7.7 EXCEPT CATEGORY 11

25 = $147 OR ANY DECIMAL PLACEMENT OR ATTEMPTED (770 + 700) DIVIDED BY 10

26 = 1100, 1120, 1110.10 OR ANY DECIMAL PLACEMENT OR ATTEMPTED
900 + 200, 900 + 200 + 10 + 10 OR 900 + 200 + 10 + .10

27 = 710, 710.10, 720 OR ANY DECIMAL PLACEMENT OR ATTEMPTED
(900 - 200) + 10, (900 - 200) + 10 + .10 OR
(900 - 200) + 10 + 10

39 = I DON'T KNOW.

Release #: RA92944E

NAEP #: S-A92944K919-3

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Calculator

Overlap: 17
1977-78 Package-Exercise: 12-19

Timing: (in seconds)
Exercise Total Time 59

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	FABC	MCTY	SMPL
AGE 17	P	32.2	28.6	30.9	33.2	35.1	37.2*	27.6*	29.8	33.5	36.8	32.1
	SE	1.6	3.6	4.0	2.2	2.9	2.2	1.8	3.2	3.0	7.9	2.0
GRD 11	P	34.6	32.8	32.5	34.3	38.9	42.1*	28.2*	31.9	35.7	40.1	34.7
	SE	1.7	4.0	4.2	2.2	3.0	2.4	1.9	3.8	3.2	9.3	2.2

Jerry bought an old Ford for $900.00. He paid $200.00 down and borrowed the rest. The total finance charge was 10% of the loan. He paid off the loan and finance charge in 10 equal installments. How much was each installment?

ANSWER _______________

A92944K3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = $77 OR 77

20 = OTHER

21 = 700, $700.00 OR ATTEMPTED 900 - 200

22 = 70, $70.00 OR ATTEMPTED (900 - 200) DIVIDED BY 10 OR 700 X .1

'23 = ANY DECIMAL OF 7 EXCEPT CATEGORIES 21 AND 22

24 = ANY DECIMAL OF 7.7 EXCEPT CATEGORY 11

25 = $147 OR ANY DECIMAL PLACEMENT OR ATTEMPTED (770 + 730) DIVIDED BY 10

26 = 1100, 1120, 1110.10 OR ANY DECIMAL PLACEMENT OR ATTEMPTED 900 + 200, 900 + 200 + 10 + 10 OR 900 + 200 + 10 + .10

27 = 710, 710.10, 720 OR ANY DECIMAL PLACEMENT OR ATTEMPTED (900 - 200) + 10, (900 - 200) + 10 + .10 OR (900 - 200) + 10 + 10

39 = I DON'T KNOW.

Release #: RA93544

NAEP #: 5-A93544-919-3

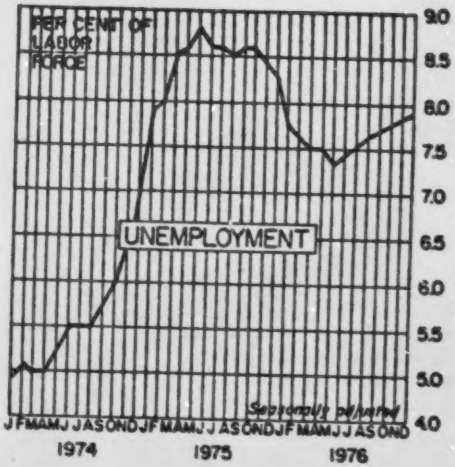
1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2C. Graphs and Tables

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Graph

Overlap:
1977-78 Package-Exercise: 17/07-20

Timing: (in seconds)
Exercise Total Time 110

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A												
AGE 17	P	86.6	81.6*	84.4	91.2*	86.7	86.9	86.3	83.4	88.8	88.5	86.5
	SE	0.9	2.0	1.5	1.1	2.5	1.3	1.0	3.1	1.7	2.0	1.3
GRD 11	P	88.7	84.1	86.3	93.2*	88.7	90.4	87.2	86.5	91.5	91.1	87.9
	SE	0.9	2.7	1.8	1.2	2.0	1.2	1.2	3.3	1.6	3.4	1.3
PART B												
AGE 17	P	66.0	55.6*	63.6	70.5*	71.7*	66.6	65.5	57.2*	72.1*	66.7	66.7
	SE	1.3	1.8	2.6	2.5	3.2	1.8	1.9	3.3	2.8	3.8	2.3
GRD 11	P	69.3	61.7*	66.5	73.3	73.4	71.9	67.0	62.5	72.2	66.6	71.1
	SE	1.4	3.3	2.6	2.5	2.9	1.8	2.1	3.6	2.9	4.2	2.2
PART C												
AGE 17	P	36.1	31.7*	33.2	40.1*	37.3	37.9	34.4	33.6	41.0*	38.8	34.2
	SE	1.4	1.6	4.3	1.7	2.6	1.7	1.9	2.5	3.2	2.5	1.5
GRD 11	P	37.7	31.9*	35.6	41.9	38.7	40.7*	35.0	37.6	42.6	37.8	35.2
	SE	1.8	2.4	5.2	2.5	3.8	2.0	2.2	3.7	3.8	4.7	1.8



A. What percent of the labor force was unemployed in July, 1974?

○ 4.9

● 5.5

○ 7.5

○ 8.6

○ I don't know.

(Continued)

B. What was the change in percent unemployed from July, 1974 to July, 1976?

○ 0.0
● 2.0
○ 3.1
○ 5.5
○ 7.5

○ I don't know.

C. If the labor force totaled 98 million in July, 1974, approximately how many employable Americans were out of work that month?

○ 4.80 million
● 5.39 million
○ 7.35 million
○ 8.43 million

○ I don't know.

Release #: NA93944

NAEP #: 3-A93944-919-3

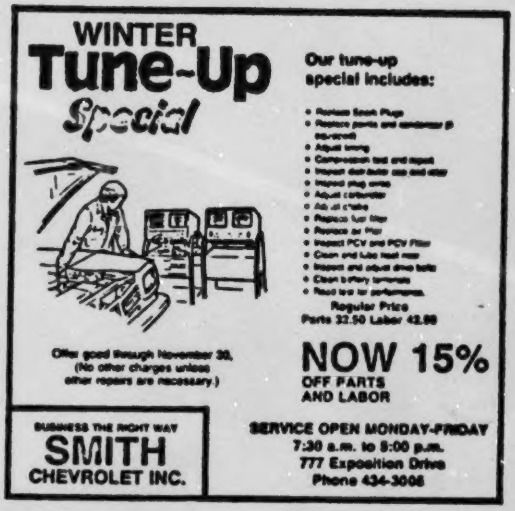
1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture

Overlap: 17
1977-78 Package-Exercise: 01-23

Timing: (in seconds)
Exercise Total Time 64

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17	P	21.0	18.2	19.4	24.2*	21.0	21.4	20.6	17.8	25.8*	26.3	19.8
	SE	1.2	2.3	3.3	1.6	2.5	1.8	1.3	2.5	2.0	3.8	1.9
GRD 11	P	22.9	20.7	21.8	25.6	21.9	23.6	22.2	19.8	26.6	31.6*	21.4
	SE	1.4	2.8	3.9	1.8	2.3	2.0	1.4	2.8	2.5	4.1	2.1



WINTER
Tune-Up
Special

Our tune-up special includes:

- Replace Spark Plugs
- Replace points and condenser (if equipped)
- Adjust timing
- Compression test and report
- Inspect distributor cap and rotor
- Inspect plug wires
- Adjust carburetor
- Adjust choke
- Replace fuel filter
- Replace air filter
- Inspect PCV and PCV Filter
- Clean and lube heat riser
- Inspect and adjust drive belts
- Clean battery terminals
- Road test for performance.

Regular Price
Parts 32.50 Labor 42.50

NOW 15%
OFF PARTS
AND LABOR

Offer good through November 30.
(No other charges unless
other repairs are necessary.)

BUSINESS THE RIGHT WAY
SMITH
CHEVROLET INC.

SERVICE OPEN MONDAY-FRIDAY
7:30 a.m. to 5:00 p.m.
777 Exposition Drive
Phone 434-3006

What would be the total cost of the Tune-Up Special?

ANSWER ____________

A93944-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE
11 = $63.75
20 = OTHER
21 = $75
22 = $11.25
23 = $86.25
24 = 60, 90, OR ATTEMPTED 75 - 15 OR 75 + 15
25 = 57.50, 47.50 OR ATTEMPTED 42.50 + 15 OR 32.50 + 15
26 = 6375 OR ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 11
39 = I DON'T KNOW.

Release #: RA93944K

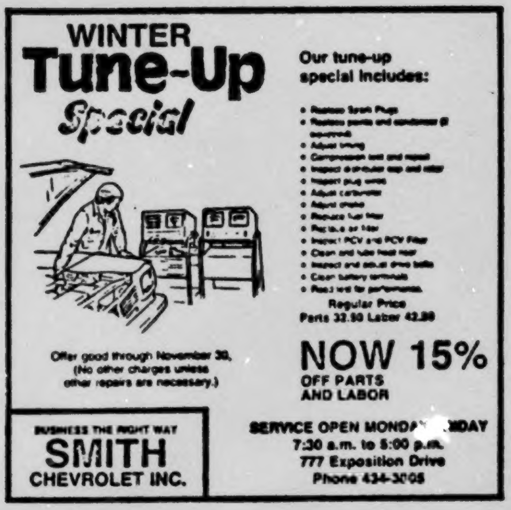
NAEP #: 5-A93944K919-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture/Calculator

	13	17
Overlap: 1977-78 Package-Exercise:	11-21	12-27
Timing: (in seconds) Exercise Total Time	63	63

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 13	P	14.2	11.2	14.5	15.3	15.3	14.2	14.2	9.9*	10.9	17.6	13.2
	SE	1.3	2.0	3.9	1.4	2.4	1.5	1.7	1.2	4.4	5.2	1.3
GRD 8	P	16.4	13.4	16.7	17.4	17.4	17.2	15.6	11.3*	20.9	21.5	15.2
	SE	1.5	2.7	4.4	1.8	2.7	1.9	1.9	1.3	4.3	6.9	1.6
AGE 17	P	36.3	31.0*	33.5	41.9*	36.2	39.0	33.8	31.0*	43.2*	42.9*	34.6
	SE	1.4	2.6	3.5	2.7	1.8	2.1	1.9	2.8	2.8	2.6	2.0
GRD 11	P	38.9	33.9*	36.2	43.4	39.2	42.7	35.5	33.6	45.4*	48.1	37.0
	SE	1.8	2.3	4.3	3.2	3.2	2.7	2.2	3.6	3.5	4.7	2.1



WINTER
Tune-Up
Special

Our tune-up
special includes:

- Replace Spark Plugs
- Replace points and condenser (if equipped)
- Adjust timing
- Compression test and report
- Inspect distributor cap and rotor
- Inspect plug wires
- Adjust carburetor
- Adjust choke
- Replace fuel filter
- Replace air filter
- Inspect PCV and PCV Filter
- Clean and lube heat riser
- Inspect and adjust drive belts
- Clean battery terminals
- Road test for performance.

Regular Price
Parts 32.50 Labor 42.50

NOW 15%
OFF PARTS
AND LABOR

Offer good through November 30.
(No other charges unless
other repairs are necessary.)

BUSINESS THE RIGHT WAY
SMITH
CHEVROLET INC.

SERVICE OPEN MONDAY-FRIDAY
7:30 a.m. to 5:00 p.m.
777 Exposition Drive
Phone 434-3005

What would be the total cost of the Tune-Up Special?

ANSWER ______________

A93944K23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = $63.75

20 = OTHER

21 = $75

22 = $11.25

23 = $86.25

24 = 60, 90 OR ATTEMPTED 75 - 15 OR 75 + 15

25 = 57.50, 47.50 OR ATTEMPTED 42.50 + 15 OR 32.50 + 15

26 = 6375 OR ANY DECIMAL PLACEMENT THAN CATEGORY 11

99 = I DON'T KNOW

Release #: RA94748

NAEP #: 5-A94744-919-3

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2C. Graphs and Tables

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Table

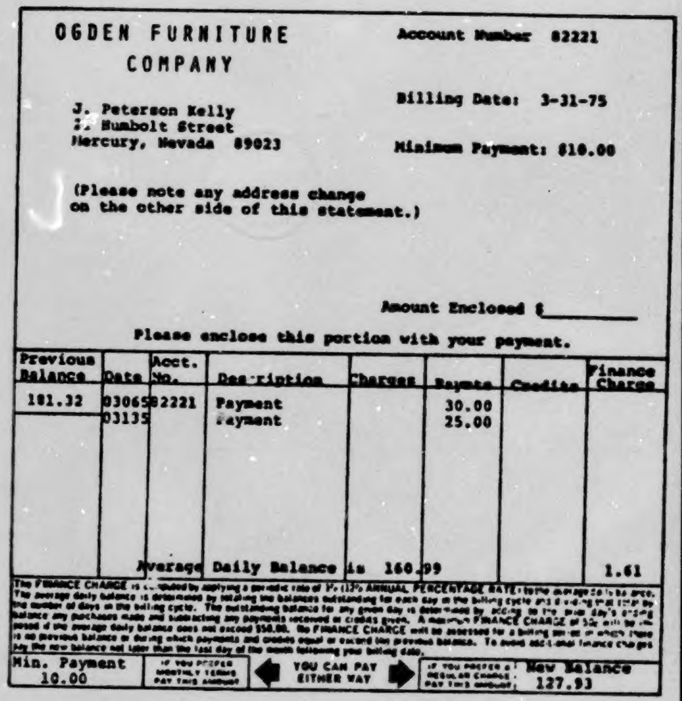
Overlap:
1977-78 Package-Exercise: $\frac{17}{08-28}$

Timing: (in seconds)
Exercise Total Time 76

Note: This exercise is parts A through C of the Basic Life Skills exercise 1-103007-810-3, which had five parts

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PABC	MCTY	SMPL
PART A												
AGE 17	P	55.8	52.1	57.8	54.2	58.7	53.9	57.4	54.6	56.5	57.6	55.6
	SE	1.6	2.1	2.9	2.5	4.2	2.4	1.7	3.1	3.0	5.1	2.6
GRD 11	P	58.4	54.7	61.1	57.3	60.5	58.5	58.4	57.2	59.8	59.2	58.3
	SE	1.6	1.7	3.0	2.7	4.4	2.4	2.1	3.1	3.2	4.0	2.7
PART B												
AGE 17	P	87.3	86.6	86.2	89.2	86.7	86.2	88.3	84.5	86.8	88.8	89.0
	SE	1.0	2.4	2.2	1.4	2.0	1.5	1.3	1.5	2.7	2.5	1.3
GRD 11	P	89.7	88.8	89.5	90.9	89.2	90.4	89.2	85.9*	89.9	92.9	91.5
	SE	1.1	2.7	2.3	1.6	2.3	1.4	1.5	1.8	2.8	1.9	1.5
PART C												
AGE 17	P	69.7	71.2	67.8	70.4	69.4	72.4*	67.3*	68.3	71.8	82.4*	67.8
	SE	1.2	2.3	2.2	2.6	1.8	1.7	1.7	3.1	1.8	5.1	1.7
GRD 11	P	72.2	76.1	68.7	73.7	70.2	76.5*	68.5*	69.5	73.8	84.6*	71.2
	SE	1.4	2.6	3.2	2.6	2.0	1.5	2.0	3.5	2.5	3.7	2.0

Mr. Kelly charged some furniture purchases at the Ogden Furniture Company. His monthly statement from the store is shown below. Look at the statement, then answer the questions on the next page.



OGDEN FURNITURE
COMPANY

Account Number 82221

Billing Date: 3-31-75

J. Peterson Kelly
[illegible] Humbolt Street
Mercury, Nevada 89023

Minimum Payment: $10.00

(Please note any address change
on the other side of this statement.)

Amount Enclosed $__________

Please enclose this portion with your payment.

Previous Balance	Date	Acct. No.	Description	Charges	Paymts	Credits	Finance Charge
181.32	03065	82221	Payment		30.00		
	03135		Payment		25.00		
		Average	Daily Balance	is	160.99		1.61

Min. Payment 10.00

YOU CAN PAY EITHER WAY

New Balance 127.93

(Continued)

A. [illegible] much money does Mr. Kelly owe the Ogden Furniture Company?

○ $55.00
● $127.93
○ $160.99
○ $181.32

○ I don't know.

B. What is the least amount of money he can pay this month on his account?

○ $1.61
● $10.00
○ $127.93
○ $181.32

○ I don't know.

C. How much money has Mr. Kelly already paid on his account?

○ $10.00
● $55.00
○ $160.99
○ $181.32

○ I don't know.

Release #: RB10311

NAEP #: 5-B10311-919-3

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 1A. Recall and Recognition

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{17}{06-16}$

Timing: (in seconds)
Exercise Total Time 15

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17	P	71.3	63.9*	70.0	73.9	75.1	67.3*	75.1*	70.6	74.2	71.2	69.9
	SE	1.5	2.7	2.8	3.0	2.8	2.2	1.8	3.6	2.8	6.6	2.0
GRD 11	P	74.5	70.3	70.5	77.4	77.5	71.8	76.7	73.2	77.5	76.9	73.0
	SE	1.6	3.5	3.0	2.8	3.2	2.3	2.0	4.4	3.1	6.4	1.8

$\boxed{3x^5}$

Which of the following is the exponent for the expression in the box?

○ 3

○ x

● 5

○ I don't know.

Release #: RR20542

NAEP #: 5-B20542-919-23

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{13}{01-23}$ $\frac{17}{08-14}$

Timing: (in seconds)
Exercise Total Time 66 62

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 13	P	21.3	25.2	19.8	22.0	18.3	24.1*	18.4*	21.9	19.6	23.7	21.4
	SE	1.2	3.5	1.9	2.0	1.7	1.4	1.7	2.7	1.4	1.7	2.0
GRD 8	P	20.2	24.2	19.6	21.2	16.7*	22.6	18.1	22.4	19.5	21.0	19.3
	SE	1.3	4.1	2.1	1.9	1.5	1.5	2.1	3.1	1.8	1.1	1.8
AGE 17	P	26.8	25.3	26.9	28.1	26.2	28.6*	24.9*	29.4	24.0	23.9	27.4
	SE	1.2	1.5	2.3	2.0	3.4	1.6	1.4	2.1	2.4	4.0	2.0
GRD 11	P	27.0	23.7	27.0	28.8	27.2	29.1	25.2	30.2	24.6	20.9	27.8
	SE	1.5	1.9	3.0	3.1	2.9	1.8	1.7	3.0	2.8	3.6	2.2

Ms. Baker has between $8,000 and $8,500 in her savings account. She wants to buy a new car that costs between $5,300 and $5,400. After she buys the car, how much money will Ms. Baker have in her savings account?

○ $2,700

○ $3,100

○ Between $2,700 and $3,100

● Between $2,600 and $3,200

○ I don't know.

Release #: RB20925

NAEP #: 5-B20925-919-3

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2E. Algebraic Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 10-31

Timing: (in seconds)
Exercise Total Time 42

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 17	P	18.7	13.7*	18.1	18.1	25.0*	20.5	16.9	20.5	21.8	26.4*	14.4*
	SE	1.4	1.9	2.4	2.8	3.8	2.0	1.5	4.3	2.7	2.5	1.5
GRD 11	P	20.1	14.8*	19.7	19.3	26.8	23.8*	13.6*	20.9	21.9	30.3*	16.8
	SE	1.5	2.1	2.4	2.9	4.2	2.2	1.6	4.4	2.3	4.0	1.9

$n = 3k$

$n + k = 72$

What is the solution for this system of equations?

ANSWER: k= ____________________

n= ____________________

B20925-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = K = 18 AND N = 54, K = 72/4 AND N = $\frac{3(72)}{4}$ OR EQUIVALENT

20 = OTHER

21 = K = 54 AND N = 18

22 = N IS 3 TIMES AS LARGE AS K EXCEPT CATEGORY 11 OR K IS 3 TIMES AS LARGE AS N EXCEPT CATEGORY 21

23 = N + K = 72 EXCEPT CATEGORIES 11, 21 AND 22

24 = N = 24, K = 3 OR K = 24 AND N = 3

25 = K = 72 - N OR K = N/3 AND N = 3K OR N = 72 - K

26 = GAVE ONLY ONE AND IT IS CORRECT; E.G., K = 18 OR N = 54

39 = I DON'T KNOW.

Release #: R821225

NAEP #: 5-821225-919-3

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2E. Algebraic Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 08-29

Timing: (in seconds)
Exercise Total Time 43

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17	P	7.6	5.6	5.1	6.6	12.5*	9.0	6.2	8.5	8.3	12.9	5.9
	SE	1.0	1.7	1.6	1.6	2.5	1.2	1.2	2.5	1.6	7.4	1.2
GRD 11	P	7.7	6.6	5.8	6.8	11.7*	9.6	6.2*	8.1	8.5	12.4	6.5
	SE	1.0	2.5	1.9	1.8	2.0	1.3	1.3	2.3	1.6	6.5	1.5

$$(x-2)^2 = 9$$

Solve this equation for x.

ANSWER ______________.

821225-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 5, -1 OR (5,-1)

20 = OTHER

21 = 5, X = 5 OR $(5 - 2)^2 = 9$

22 = -1, X = -1 OR ATTEMPTED $(-1 - 2)^2 = 9$

23 = 13, X = 13 OR ATTEMPTED X - 4 = 9 OR 13 - 4 = 9

24 = 6 1/2, 2 1/2 OR ATTEMPTED 2X - 4 = 9 OR 2X + 4 = 9

25 = $X^2 = 13$, $\sqrt{13}$ OR ATTEMPTED $X^2 - 4 = 9$ OR
$X^2 = 5$, $\sqrt{5}$ OR ATTEMPTED $X^2 + 4 = 9$

26 = ATTEMPTED TO EXPAND $(X - 2)^2 = 9$ TO $X^2 - 4X + 4 = 9$ TO $X^2 - 4X - 5 = 0$ AND FACTOR $(X - 5)(X + 1) = 0$ BUT MADE AN ERROR OR FAILED TO COMPLETE. THIS CATEGORY TAKES PRECEDENCE OVER CATEGORIES 21 THROUGH 25.

27 = ATTEMPTED TO TAKE THE SQUARE ROOT OF BOTH SIDES WITH NO OR WRONG ANSWER; E.G., $\sqrt{(X - 2)^2} = \sqrt{9}$ OR X - 2 = + 3 OR -3. THIS CATEGORY TAKES PRECEDENCE OVER CATEGORIES 21 THROUGH 25.

28 = 11

39 = I DON'T KNOW.

NOTE: CATEGORIES 23-25 INCLUDE ATTEMPTS TO SOLVE THE EQUATIONS WHICH ARE LISTED IN THOSE CATEGORIES. HOWEVER, IF THE ANSWER THEY GET BY SOLVING IT IS LISTED IN ANOTHER CATEGORY, SCORE IT FOR THE OTHER CATEGORY.

EXAMPLES:

$X^2 = 13$
X = 6 1/2 GOES INTO CATEGORY 24

X - 4 = 9
X = 5 GOES INTO CATEGORY 21

Release #: PB21725

NAEP #: 5-B21725-919-12

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2E. Algebraic Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{9}{03\text{-}25}$ $\frac{13}{06\text{-}08}$

Timing: (in seconds)
Exercise Total Time 39 25

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	14.6	13.2	11.7	14.6	18.6*	15.0	14.2	18.0	16.5	17.4	11.5
	SE	1.3	4.3	1.9	2.1	1.5	1.6	1.4	3.8	2.2	3.6	1.4
GRD 4	P	16.9	15.1	14.0	17.8	20.0	17.1	16.6	22.4	17.9	22.2	12.9*
	SE	1.5	5.1	2.7	1.8	1.6	1.8	1.8	4.5	2.2	5.6	1.4
AGE 13	P	53.9	46.5*	50.6	58.5	58.7*	53.8	54.1	47.3	58.4	61.8	53.6
	SE	1.7	3.8	4.1	2.8	2.2	1.8	2.1	3.7	3.0	5.7	2.7
GRD 8	P	57.6	52.7	54.2	62.2	59.8	58.9	56.5	50.1*	58.8	69.6*	58.8
	SE	1.8	4.7	4.0	3.5	2.1	2.3	2.1	3.6	3.1	5.9	2.9

$\square - 19 = 32$

What number should go in the □ to make this number sentence TRUE?

ANSWER ____________

B21725-12

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 51 OR (32 + 19)

20 = OTHER

21 = (32 - 19) OR ATTEMPTED 32 - 19

22 = 41

39 = I DON'T KNOW.

Release #: MB22525

NAEP #: S-B22525-919-3

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2E. Algebraic Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 10-21

Timing: (in seconds)
Exercise Total Time 28

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17	P	32.6	23.5*	31.0	34.7	40.6*	33.5	31.7	32.2	40.7*	39.4	27.0*
	SE	1.7	2.9	3.0	3.2	4.2	2.5	1.8	4.7	3.2	4.0	2.4
GRD 11	P	35.8	25.6*	34.6	37.9	44.5	38.1	33.8	36.1	43.6*	44.1	29.9*
	SE	1.9	3.8	3.3	2.9	5.1	2.7	2.0	4.9	3.1	4.0	2.9

$$30 = \frac{2}{5}c + 10$$

Solve this equation for c.

ANSWER ______________

B22525-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE
11 = 50, C = 50 OR EQUIVALENT
20 = OTHER
21 = 5 OR C = 5
22 = 8 OR C = 8
23 = 10 OR C = 10
24 = 20 OR C = 20
25 = 30 OR C = 30
26 = 40 OR C = 40
27 = 100 OR C = 100
39 = I DON'T KNOW.

Release #: RB22625

NAEP #: 5-B22625-919-23

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2E. Algebraic Manipulations

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{13}{10\text{-}29}$ $\frac{17}{11\text{-}36}$

Timing: (in seconds)
Exercise Total Time 41 36

			NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
				SE	WEST	CENT	NE	MALE	FEM	LC	FRNG	MCTY	SMPL
AGE	13	P	34.0	29.8	35.4	36.2	33.5	33.6	34.3	29.5	38.6*	40.0	32.4
		SE	1.4	3.1	3.3	2.1	3.1	1.9	2.0	2.8	2.4	5.0	2.1
GRD	8	P	37.4	31.8	38.8	42.9*	35.0	37.1	37.6	37.2	40.6	43.8	33.9
		SE	1.6	3.5	3.3	2.5	3.5	2.5	2.2	3.3	2.7	5.3	2.2
AGE	17	P	47.6	43.3	42.4	52.7	49.8	50.3	45.0	42.7	48.6	57.2	47.8
		SE	1.8	3.0	3.4	4.0	3.1	1.8	2.8	3.7	4.8	5.5	2.2
GRD	11	P	50.6	47.2	45.2	55.9	51.3	53.9	47.7	47.8	48.2	60.8*	51.8
		SE	2.2	3.2	4.2	4.8	3.3	2.3	3.1	4.6	4.0	4.2	2.2

$(n+5)-5=n$

What values of n make this sentence TRUE?

○ 0 only

○ 0 and 5 only

● Any number

○ No number

○ I don't know.

Release #: 8B22745

NAEP #: 5-B22745-919-123

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2F. Estimating Computations and Measurements

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 9 / 02-27 13 / 01-05 17 / 01-17

Timing: (in seconds)
Exercise Total Time 25 19 19

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 9	P	23.6	23.5	19.3*	20.7*	21.9	24.7	22.5	24.4	26.7	21.7	23.7
	SE	1.1	2.7	1.9	1.8	1.9	1.5	1.4	1.7	2.4	4.8	2.0
GRD 4	P	26.4	28.6	21.6	32.5*	23.3	28.3	24.6	22.7	29.8	25.5	26.1
	SE	1.5	3.3	3.2	2.2	2.2	2.2	1.8	2.2	2.9	5.7	2.5
AGE 13	P	65.5	58.0*	60.2*	71.3*	70.6*	64.4	66.6	62.2	72.0*	72.3	62.0
	SE	1.4	3.1	2.8	2.9	2.5	1.7	1.8	3.1	2.1	6.7	2.3
GRD 8	P	71.8	65.4*	65.3	79.0*	76.3*	72.4	71.2	71.1	76.1*	78.4*	67.7
	SE	1.4	2.8	3.8	2.6	1.8	1.7	2.3	3.4	1.9	3.2	2.3
AGE 17	P	85.9	83.0*	84.0	89.8*	88.2	85.7	86.0	85.9	86.3	90.0*	84.9
	SE	0.9	2.3	2.1	1.3	1.8	1.3	1.3	2.1	2.8	1.7	1.2
GRD 11	P	88.4	84.4	85.2	91.0	92.1*	89.1	87.8	88.5	86.0	95.3*	88.1
	SE	1.1	2.9	2.6	1.5	1.3	1.5	1.5	2.3	3.4	2.1	1.3

3900 + ☐ = 6000

Which one of the following is CLOSEST to the number that goes in the box?

○ 1000
● 2000
○ 3000
○ 5000

○ I don't know.

Release #: RB22925

NAEP #: 5-B22925-919-12

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2E. Algebraic Manipulations

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{9}{06-16}$ $\frac{13}{04-16}$

Timing: (in seconds)
Exercise Total Time 53 37

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PARC	HCTY	SMPL
AGE 9	P	26.4	26.3	16.6*	29.3	33.3*	25.3	27.4	28.5	25.0	21.7	26.8
	SE	1.5	3.2	1.9	2.8	3.5	1.5	2.1	4.5	3.9	4.3	1.4
GRD 4	P	28.2	28.3	16.7*	31.4	36.3*	26.6	29.7	32.5	26.9	23.2	27.9
	SE	1.9	3.4	2.5	4.0	4.0	2.0	2.6	5.9	4.9	5.6	1.9
AGE 13	P	66.3	63.0*	61.6*	70.6	72.8*	65.3	67.3	63.3	70.4	72.7	65.0
	SE	1.6	2.9	2.4	3.2	3.7	2.1	1.8	3.1	3.6	5.1	2.2
GRD 8	P	71.4	67.0	66.8	74.3	76.5	71.2	71.5	68.8	72.8	80.3	70.4
	SE	1.8	2.3	3.1	4.0	3.6	2.5	2.2	3.2	4.4	4.5	2.4

$5 + \square < 12$

Which number(s) below can go in the ☐ to make this number sentence TRUE?

○ 7

● Any number less than 7

○ Any number greater than 7

○ I don't know.

Release #: RB23125

NAEP #: 5-B23125-919-23

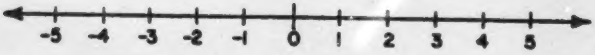
1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2E. Algebraic Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Graph

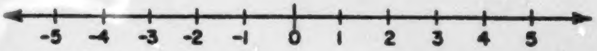
	13	17
Overlap: 1977-78 Package-Exercise:	05-20	02 10
Timing: (in seconds) Exercise Total Time	63	54

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PARC	MCTY	SMPL
PART A												
AGE 13	P	1.9	0.6*	1.7	0.9	4.5	1.5	2.3	0.8	3.0	4.7	1.5
	SE	0.6	0.4	0.7	0.6	2.1	0.6	0.7	0.4	1.1	3.6	0.6
GRD 8	P	2.6	0.9*	2.5	1.4	5.0	2.3	2.8	1.2	3.5	5.6	2.1
	SE	0.7	0.5	1.0	1.0	2.3	0.9	0.9	0.5	1.2	4.1	0.9
AGE 17	P	17.7	16.9	13.6*	19.7	20.5	18.5	17.0	14.7	23.5	20.4	14.8
	SE	1.4	3.2	1.5	3.2	2.3	2.0	1.5	3.8	3.6	2.9	1.8
GRD 11	P	19.8	17.7	15.2*	21.8	23.8	21.5	18.2	16.5	24.6	21.7	17.7
	SE	1.4	3.4	1.9	3.1	2.2	2.1	1.8	4.1	4.2	4.3	2.1
PART B												
AGE 13	P	3.8	1.2*	2.9	3.3	7.8	3.4	4.3	1.5*	5.5	9.6	3.1
	SE	0.8	0.7	0.9	1.5	2.7	0.9	1.0	0.6	1.4	7.4	1.1
GRD 8	P	4.9	1.7*	3.5	4.0	9.2	4.7	5.0	1.6*	6.5	12.1	4.1
	SE	1.1	1.0	1.2	2.2	3.1	1.3	1.2	0.6	1.8	8.9	1.6
AGE 17	P	12.3	10.9	9.6	14.9	13.1	14.2	10.5	9.0	17.4*	17.5	9.4
	SE	1.4	1.6	1.7	3.4	2.9	1.7	1.6	2.7	3.0	3.7	1.7
GRD 11	P	14.1	12.9	10.8	16.7	15.2	16.8	11.6	10.7	18.5	22.4	11.1
	SE	1.6	2.1	2.1	3.9	2.9	2.2	1.9	3.4	3.5	5.9	1.9

A. Graph the solution set of $x < 3$ for x a REAL number.



B. Graph the solution set of $x < 3$ for x an INTEGER.



B23125-23
PART A

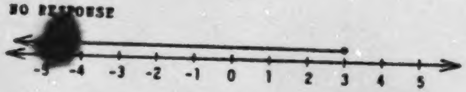
SCORING GUIDE: PART A

Categories are listed below.

PART A:

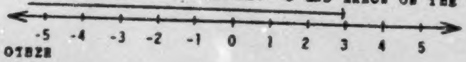
00 = NO RESPONSE

11 =



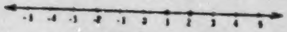
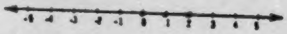
CAN DRAW LINE INTO ARROW ON GRAPH WITHOUT DRAWING ANOTHER ARROW. INSTEAD OF THE OPEN CIRCLE ABOVE 3, ")" MAY BE USED, ALSO MAY HAVE A SOLID DOT (OR START THE LINE) JUST TO THE LEFT OF 3.

12 = SAME AS ABOVE, EXCEPT NO ARROW ON GRAPH. DRAWS LINE TO -5 WITHOUT AN ARROW OR BETWEEN -5 AND ARROW ON THE GRAPH.

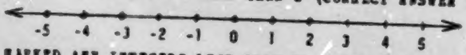


20 = OTHER

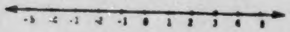
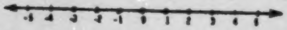
21 = AN X, DOT OR OTHER MARK AT 0 AND/OR 1 AND/OR 2

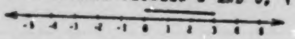
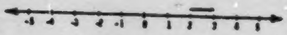
22 = MARKED ALL INTEGERS LESS THAN 3 (CORRECT ANSWER TO PART B)



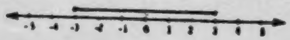
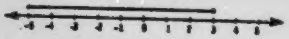
23 = MARKED ANY INTEGERS LESS THAN OR EQUAL TO 3, BUT NOT CATEGORY 21 OR 22

24 = DREW A LINE BETWEEN 3 AND 0, 1 OR 2

25 = DREW A LINE BETWEEN 3 AND AN INTEGER LESS THAN ZERO

39 = I DON'T KNOW.

B23125-23
PART B

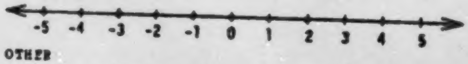
SCORING GUIDE: PART B

Categories are listed below.

PART B:

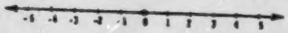
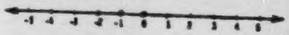
00 = NO RESPONSE

11 =

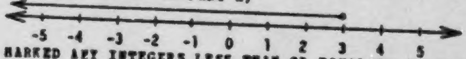


20 = OTHER

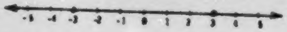
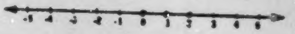
21 = AN X, DOT OR OTHER MARK AT 0 AND/OR -1, AND/OR -2

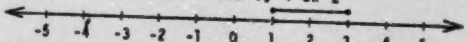
22 = DREW ARROW TO LEFT OF 3 WITH AN OPEN CIRCLE (ETC.) AT 3 (CORRECT ANSWER TO PART A)



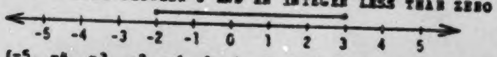
23 = MARKED ANY INTEGERS LESS THAN OR EQUAL TO 3, BUT NOT CATEGORIES 11, 21 OR 22

24 = DREW A LINE BETWEEN 3 AND 0, 1 OR 2



25 = DREW A LINE BETWEEN 3 AND AN INTEGER LESS THAN ZERO



26 = {-5, -4, -3, -2, -1, 0, 1, 2} WITH NOTHING ON GRAPH

39 = I DON'T KNOW.

Release #: RB23325

NAEP #: 5-B23325-919-3

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2E. Algebraic Manipulations

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{17}{05\text{-}36}$

Timing: (in seconds)
Exercise Total Time 42

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	DC	PARC	HCTY	SMPL
AGE 17	P	20.1	18.2	20.5	18.4	23.3	20.2	19.9	21.6	22.7	15.2	18.7
	SE	1.1	1.5	2.5	1.9	3.0	1.5	1.6	2.4	2.7	3.8	1.5
GRD 11	P	20.7	16.3*	19.9	20.6	25.2	20.4	20.9	24.4	25.6	10.5*	18.0
	SE	1.3	1.6	2.9	2.4	3.3	1.8	1.9	2.6	3.6	2.2	1.8

Which of the following inequalities is equivalent to $5 - 2x < 13$?

○ $x < -4$

○ $x < 4$

● $x > -4$

○ $x > 4$

○ I don't know.

Release #: 2B23532

NAEP #: 5-B23532-919-12

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 9/01-27 13/06-35

Timing: (in seconds)
Exercise Total Time 45 40

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	FARC	MCTY	SMPL
AGE 9	P	34.2	32.3	25.7*	36.6	41.5*	32.6	35.8	31.2	40.3*	32.8	33.1
	SE	1.5	3.2	2.8	2.4	3.1	2.0	1.8	2.9	3.1	3.5	2.3
GRD 4	P	39.2	35.9	29.9*	43.5	45.5*	38.1	40.2	35.7	45.0	40.0	38.1
	SE	1.7	3.7	4.3	2.5	2.7	2.3	2.2	3.5	4.1	6.0	2.4
AGE 13	P	73.4	66.5*	70.7	80.1*	79.4	67.7*	79.2*	66.6*	78.6*	74.1	74.1
	SE	1.2	2.6	2.4	2.2	2.6	1.5	1.5	2.7	2.6	4.4	1.4
GRD 8	P	77.7	72.5	77.0	84.3*	76.0	72.3*	82.4*	70.2*	80.8	79.5	79.4
	SE	1.2	3.0	2.4	1.8	2.4	1.8	1.6	2.6	2.4	6.2	[illegible]

☐ + 738 = 1810

Which number sentence could you use to find what belongs in the ☐ ?

○ 1810 + 738 = ☐
● 1810 - 738 = ☐
○ 738 - 1810 = ☐
○ I don't know.

Release #: RB24731

NAEP #: 5-B24731-919-23

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 3A. Translation

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 13 / 01-11 17 / 01-16

Timing: (in seconds)
Exercise Total Time 57 59

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 13	P	12.9	8.1*	10.5	17.1*	15.0	12.1	13.6	14.3	14.9	12.9	10.8
	SE	1.0	2.2	1.5	2.4	1.4	1.3	1.4	1.5	2.8	3.1	1.2
GRD 8	P	14.3	8.2*	10.5*	20.8*	16.8	13.5	15.0	18.1	15.3	14.8	11.8*
	SE	1.[illegible]	2.3	1.6	2.6	2.2	1.4	1.5	2.0	2.4	2.8	1.2
AGE 17	P	42.6	38.3	35.4*	50.4*	44.6	41.3	43.9	41.5	45.5	51.4	40.5
	SE	1.9	3.5	2.5	2.9	6.1	2.5	2.1	2.7	3.9	7.5	2.9
GRD 11	P	45.7	43.9	39.1*	53.2*	45.3	44.5	46.7	44.4	43.8	61.1*	44.6
	SE	2.3	2.4	3.4	3.1	8.4	2.9	2.5	2.5	4.9	5.5	3.5
PART B												
AGE 13	P	62.7	50.7*	61.0	66.5	71.5*	61.5	63.9	56.8	74.1*	67.5	58.5*
	SE	1.6	3.6	2.7	3.3	2.9	2.0	2.2	3.9	2.3	2.9	2.4
GRD 8	P	69.7	57.7*	66.4	75.7*	77.0*	69.6	69.8	65.5	78.1*	74.0	65.5
	SE	1.6	4.8	3.6	1.5	2.1	2.0	2.2	3.8	2.5	2.5	2.7
AGE 17	P	81.5	74.7*	82.1	84.8*	82.8	81.0	82.0	81.1	85.7*	88.9*	78.7*
	SE	1.1	1.9	2.0	1.5	3.1	1.5	1.4	2.0	1.6	1.8	1.8
GRD 11	P	83.7	77.9*	83.4	87.3*	83.8	84.7	82.9	83.3	86.7	91.8*	81.3
	SE	1.1	2.2	1.6	1.3	4.1	1.7	1.4	2.0	1.6	1.6	2.2

Janelle had 173 matchbook covers in her collection. Her aunt sent her some more. She now has 241 matchbook covers.

A. Write an equation to show how many matchbook covers Janelle's aunt sent her?

ANSWER ____________________

B. Solve this equation.

ANSWER ____________________

B24731-23
PARTS A&B

SCORING GUIDE: PARTS A & B

Categories are listed below.

NOTE: FOR THIS EXERCISE LOOK FOR THE RESPONSES ANYWHERE ON THE PAGE. RESPONSES TO PART B ARE OFTEN ON THE ANSWER LINE FOR PART A AND EQUATION EXPRESSIONS FOR PART A MAY BE ANYWHERE.

PART A:

00 = NO RESPONSE

11 = 241 - 173 = X, Y, ☐, ETC. OR 173 + X = 241

12 = 241 - 173 = 68 OR 173 + 68 = 241

20 = OTHER

21 = 241 - 173, 173 + 68 OR 241 - 68 WITH NO OR WRONG ANSWER

22 = OTHER EQUATIONS

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 68 (IF 68 APPEARS ANYWHERE ON PAGE)

20 = OTHER

21 = SOLVED THEIR INCORRECT EQUATION FROM PART A CORRECTLY (MUST HAVE CATEGORY 22 IN PART A)

39 = I DON'T KNOW.

Release #: RB25042

NAEP #: 5-B25042-919-3

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 4A. Routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 17 / 02-13

Timing: (in seconds)
Exercise Total Time 54

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17	P	27.6	27.0	21.6*	28.8	33.2*	30.1*	25.1*	21.9	33.4	36.5	24.5
	SE	1.7	4.4	1.9	3.4	3.0	1.9	1.9	4.4	3.0	6.3	2.4
GRD 11	P	31.4	31.8	24.2*	33.1	36.7	36.2*	27.0*	26.1	37.0	44.6*	27.3*
	SE	1.8	3.3	2.1	3.9	3.8	2.1	2.0	5.2	3.4	5.2	2.5

One number is 3 times as large as a second number. The sum of the two numbers is 72. What are the two numbers?

ANSWER ________________

B25042-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 18 AND 54, X = 18 AND 3X = 54, OR 18 + 54

20 = OTHER

21 = 18, 6 OR 18 + 6 WITH NO WORK OR WORK OTHER THAN CATEGORIES 27 AND 28

22 = 18 AND SOME NUMBER OTHER THAN CATEGORIES 11, 21, 27, OR 28

23 = 24, 24 AND 8, 24 AND ANOTHER NUMBER OR ATTEMPTED 3X = 72, 72 DIVIDED BY 3 OR 3 X 24 = 72

24 = TWO NUMBERS WHICH ADD TO 72 OTHER THAN CATEGORIES 11 AND 23

25 = GAVE EITHER 18 OR 54 (AND NO OTHER NUMBER) WITH NO WORK OR WORK OTHER THAN CATEGORIES 27 & 28

26 = TWO NUMBERS WHERE ONE IS 3 TIMES THE OTHER EXCEPT FOR CATEGORIES 11, 21, 23, 27 OR 28

27 = 3X + X = 72, 4X = 72 OR 72 DIVIDED BY 4 WITH NO OR WRONG ANSWER

28 = Y = 3X AND Y + X = 72 MUST HAVE BOTH EQUATIONS WITH NO OR WRONG ANSWER

39 = I DON'T KNOW.

Release #: RB25242

NAEP #: 5-B25242-919-3

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 4B. Non-routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{17}{04-22}$

Timing: (in seconds)
Exercise Total Time 116

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17	P	20.4	17.2	17.8	22.5	23.1	22.6	18.5	19.8	23.5	27.1*	18.3
	SE	1.1	2.0	1.9	2.2	2.4	1.5	1.5	2.3	2.9	2.4	1.1
GRD 11	P	21.8	19.1	18.6	25.1	22.5	25.0	19.0*	19.0	25.1	30.6*	20.3
	SE	1.3	2.5	2.8	2.6	2.7	2.1	1.6	2.8	2.7	3.9	1.6

A supermarket charges $5.10 for a six-pound package of meat for a meatloaf. The package contains ground beef and ground pork. If ground beef sells for 80 cents a pound and ground pork sells for 95 cents a pound, how many pounds of ground beef are in the package?

ANSWER ________________

B25242-3

SCORING GUIDE

Categories are listed below.

NOTE: CATEGORIES 24 THROUGH 26 MAY HAVE INCORRECT DECIMALS OF 80, 95 OR 510.

00 = NO RESPONSE

11 = 4 OR 4 LB. BEEF AND 2 LB. PORK WITH NO CORRECT EQUATION OR PAIR OF EQUATIONS

12 = 4 OR 4 LB. BEEF AND 2 LB. PORK WITH A CORRECT EQUATION OR PAIR OF EQUATIONS, E.G. 80X + 95Y = 510 AND X + Y = 6, 80X + 95(6 - X) = 510 OR EQUIVALENT

20 = OTHER

21 = 2 AND 4 WITH NO LABELS TO INDICATE WHICH IS BEEF EXCEPT CATEGORIES 24 AND 25

22 = 2 OR 2 LB. BEEF WITH NO CORRECT EQUATION(S)

23 = 2 OR 2 LB. BEEF WITH THE EQUATION(S), .80Y + .95X = 5.10 AND X + Y = 6, .95Y + .80[illegible] Y) = 5.10 OR EQUIVALENT

24 = WROTE .80X + .95(6 - X) = 5.10 BUT HAD NO OR WRONG ANSWER

25 = WROTE X + Y = 6 AND 80X + 95Y = 510 BUT HAD NO OR WRONG ANSWER

26 = WROTE EITHER X + Y = 6 OR 80X + 95Y = 510 WITH NO OR WRONG ANSWER

27 = 3

28 = 6

39 = I DON'T KNOW.

Release #: BB25031

NAEP #: S-B25031-919-2

1977-78 Content Area: E. Variables and Relationships
1977-78 Objective: 3A. Translation

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{13}{02-29}$

Timing: (in seconds)
Exercise Total Time 30

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	FADC	MCTY	SMPL
AGE 13	P	78.2	74.8	77.0	81.3	78.8	77.8	78.6	69.8*	86.7*	78.9	77.9
	SE	1.3	2.9	2.9	2.7	1.4	1.7	1.6	3.0	1.7	6.4	2.2
GRD 8	P	82.6	80.6	82.3	85.4	82.0	82.3	82.9	77.1*	87.5*	87.6	81.8
	SE	1.1	2.1	2.3	1.8	2.4	1.6	1.3	2.2	1.9	5.2	2.2

Tom has y marbles, and Mary has x marbles. Mary has more marbles than Tom. Which sentence shows this relation?

○ $x = y$

○ $x < y$

● $x > y$

○ I don't know.

Release #: D25525

NAEP #: 5-D25525-919-3

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2E. Algebraic Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{17}{10-26}$

Timing: (in seconds)
Exercise Total Time 27

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	DC	FADC	MCTY	SUBL
AGE 17	P	32.5	25.1*	24.2*	35.1	46.2*	33.7	31.4	32.0	35.4	46.9*	28.4
	SE	1.6	3.3	1.8	2.9	4.0	2.4	1.7	4.9	2.9	4.5	1.9
GRD 11	P	34.9	26.2*	26.1*	38.1	50.6*	37.2	32.9	35.4	38.2	51.5*	30.0*
	SE	1.7	2.5	2.0	3.4	4.9	2.6	1.9	5.0	3.7	5.8	2.4

$.03n = 9.6$

Solve this equation for n.

ANSWER ____________

D25525-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = N = 320 OR 320

12 = 9.6/.03, $\frac{96}{.3}$ OR $\frac{960}{3}$

20 = OTHER

21 = 3.2 OR N = 3.2

22 = ANY DECIMAL PLACEMENT OF 32 EXCEPT FOR CATEGORIES 11 AND 21

23 = .288 OR N = .288

24 = ANY DECIMAL PLACEMENT OF 2.88 EXCEPT CATEGORY 23 OR ATTEMPTED 9.6 X .03

25 = 9.63, 9.57, 9.3, 9.9 OR ATTEMPTED 9.6 + .03 OR 9.6 - .03 OR OTHER DECIMAL PLACEMENT

39 = I DON'T KNOW.

Release #: R833725

NAEP #: S-830725-919-3

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2E. Algebraic Manipulations

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: $\frac{17}{11-19}$

Timing: (in seconds)
Exercise Total Time 51

$\frac{3}{2a} + \frac{3c}{4b} =$

○ $\frac{3 + 3c}{2a + 4b}$

○ $\frac{6c}{6ab}$

○ $\frac{3 + 3c}{8ab}$

● $\frac{6b + 3ac}{4ab}$

○ I don't know.

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17	P	13.9	9.5*	9.2*	16.9	10.4	14.7	13.2	12.7	20.0*	24.7	9.3*
	SE	1.3	2.0	1.3	1.6	4.5	1.8	1.4	1.9	2.2	7.7	1.3
GRD 11	P	15.0	8.6*	9.5*	18.9	20.4	16.3	13.8	13.3	20.1*	25.8	10.9*
	SE	1.3	1.4	1.8	2.0	4.0	2.0	1.3	2.2	2.4	7.2	1.3

Release #: BB32332

NAEP #: S-B32032-919-3

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 06-06

Timing: (in seconds)
Exercise Total Time 26

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PARC	BCTY	SMPL
AGE 17	P	25.2	17.5*	25.0	29.7*	25.8	29.5*	21.1*	25.1	32.5*	24.1	21.2*
	SE	0.9	1.2	1.7	1.9	1.7	1.8	1.4	2.2	2.3	3.0	1.3
GRD 11	P	26.1	18.3*	23.3	31.7*	27.1	31.4*	21.5*	24.9	34.3*	25.7	21.9*
	SE	1.2	1.4	2.1	2.1	2.6	2.2	1.7	3.1	2.5	4.8	1.7

If x and y are different numbers, which of the following is always between x and y?

○ $x + \frac{1}{2}$

○ $x - y$

○ $\frac{x - y}{2}$

● $\frac{x + y}{2}$

○ I don't know.

Release #: RB32432

NAEP #: 5-B32432-919-3

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 17 / 08-04

Timing: (in seconds)
Exercise Total Time 34

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 17	P	58.0	50.0*	56.0	61.3	64.1*	59.8	56.3	54.2	66.0*	55.7	56.2
	SE	1.7	2.8	4.2	3.3	2.6	1.9	2.6	5.0	2.2	3.7	2.1
GRD 11	P	63.3	54.8*	58.7	65.5	70.4*	66.4	59.9*	69.1	69.5*	61.9	60.9
	SE	1.7	3.4	4.5	2.7	3.4	2.0	2.6	5.3	2.3	4.1	2.4

If x and y are odd numbers, what is true about x + y?

○ It is odd.

● It is even.

○ It may be either even or odd depending on what x and y are.

○ I don't know.

Release #: 8B03547

NAEP #: S-B40547-919-23

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 4D. Reasoning and Making Judgments

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Table

Overlap:	13	17
1977-78 Package-Exercise:	09-27	04-35
Timing: (in seconds)		
Exercise Total Time	78	62

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 13	P	35.3	27.9*	31.0	41.2*	39.1	33.3	37.4	33.3	41.5	47.6*	30.7*
	SE	1.8	2.7	2.3	3.5	5.2	1.9	2.4	3.1	5.3	6.2	2.2
GRD 8	P	39.6	32.7	35.9	44.9	42.4	37.2	41.8	38.6	46.2	51.8*	33.4*
	SE	2.3	3.6	3.1	3.9	6.0	2.3	2.9	3.6	5.9	6.3	2.7
AGE 17	P	58.5	49.2*	52.5	63.2*	6[illegible].3*	58.1	58.8	55.8	65.4*	70.1*	54.6
	SE	1.6	2.6	3.8	2.3	4.0	1.9	2.0	3.3	2.6	5.0	2.9
GRD 11	P	61.5	55.8	53.6*	65.3	68.4	62.0	61.1	58.5	66.6	75.0*	58.6
	SE	1.9	3.5	4.5	2.3	4.3	2.4	2.2	3.4	3.1	4.7	3.2
PART B												
AGE 13	P	2.5	1.2	2.6	3.0	2.8	2.7	2.2	2.0	4.9*	2.3	1.6
	SE	0.4	0.7	1.0	0.7	0.9	0.5	0.5	0.7	1.5	1.0	0.5
GRD 8	P	3.4	1.8	4.0	4.3	3.4	3.9	3.0	2.9	6.0	3.2	2.4
	SE	0.6	0.9	1.6	1.1	1.1	0.8	0.7	1.0	1.9	1.3	0.8
AGE 17	P	31.3	20.8*	28.5	32.6	40.3*	31.3	31.4	33.1	38.3*	37.4	25.4*
	SE	1.6	2.0	2.9	2.5	3.9	2.0	1.9	3.5	3.4	6.2	2.2
GRD 11	P	32.8	25.7*	28.6	33.6	41.0*	33.5	32.1	33.9	37.8	41.0	28.1*
	SE	1.7	2.2	3.1	3.1	3.7	2.6	2.0	4.1	3.4	6.8	2.4

x	y
1	6
3	
4	9
7	12
n	

A. What is the value of y in the above table when x = 3?

ANSWER ____________

B. What is the value of y in the above table when x = n?

ANSWER ____________

B40547-23
PARTS A&B

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE
11 = 8 OR 3 + 5
20 = OTHER
21 = 3
22 = 6, 9 OR 12
23 = 5
24 = 27
39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE
11 = 8 + 5, 5 + 8, 12 + (8 - 7) OR EQUIVALENT
20 = OTHER
21 = 15
22 = 6, 9 OR 12
23 = 8
24 = 27
25 = 3
26 = 5
39 = I DON'T KNOW.

Release #: RB41032

NAEP #: 5-B41032-919-3

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 07-17

Timing: (in seconds)
Exercise Total Time 40

If $x = 2y$, what is $3x^2 + 4$?

○ $3y^2 + 4$

○ $6y^2 + 4$

● $12y^2 + 4$

○ $2y$

○ I don't know.

		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
			REGION				SEX		COMMUNITY SIZE (DOC)			
AGE 17	P	36.6	35.6	36.0	36.7	38.4	34.6	38.5	38.3	39.1	42.7	33.7*
	SE	1.5	2.0	3.3	2.5	3.8	2.0	1.8	2.3	3.0	5.0	2.1
GRD 11	P	38.0	37.0	37.7	39.3	37.4	36.9	39.0	40.7	39.4	47.2	34.9
	SE	1.6	2.4	3.7	3.1	3.6	2.3	1.9	2.7	3.5	6.4	2.4

Release #: RB41732

NAEP #: 5-B41732-919-3

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 03-15

Timing: (in seconds)
Exercise Total Time 36

			REGION				SEX		COMMUNITY SIZE (DOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17 P	57.6	50.8*	54.1	65.2*	57.0	56.0	59.1	54.2	64.5*	67.1*	54.6
SE	1.6	2.5	3.9	2.9	2.7	2.0	2.0	2.9	3.4	3.7	2.8
GRD 11 P	60.2	55.1	58.0	66.9*	57.0	60.1	60.3	56.9	66.3	70.1	57.5
SE	1.8	2.8	3.1	3.5	3.9	2.4	2.2	3.7	3.7	6.1	2.2

If $y = 16 - x$, what happens to y as x increases?

○ y increases.

● y decreases.

○ y remains the same.

○ Cannot tell what happens to y.

○ I don't know.

Release #: BB41932

NAEP #: 5-B41932-919-23

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

		13	17
Overlap: 1977-78 Package-Exercise:		03-20	06-11
Timing: (in seconds) Exercise Total Time		56	55

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 13	P	53.9	49.9*	53.0	53.2	59.7*	52.7	55.2	53.9	54.1	61.3	52.8
	SE	1.1	1.7	1.9	2.3	2.6	1.4	1.5	2.3	2.6	5.4	1.6
GRD 8	P	56.1	54.7	54.3	52.7	61.7*	54.3	57.7	59.8	54.9	58.7	54.3
	SE	1.5	2.7	2.8	3.6	1.9	1.4	2.1	1.9	3.4	4.4	2.5
AGE 17	P	54.4	46.0*	55.7	57.9	53.4	53.6	55.1	53.9	57.9	54.4	52.6
	SE	1.6	4.1	2.6	2.6	3.0	2.0	2.4	2.6	2.7	7.4	2.4
GRD 11	P	56.0	46.8*	59.4	60.5*	53.8	56.2	55.0	55.8	60.9	54.7	53.4
	SE	1.8	4.8	4.3	2.5	2.4	2.4	2.8	3.7	3.6	5.8	2.7

Some people suggest the following formula be used to determine the average weight for boys between the ages of 1 and 7:

$$W = 17 + 5A$$

where W is the average weight in pounds and A is the boy's age in years.

According to this formula, for each year older a boy gets, how much more should he weigh?

- ● 5 pounds
- ○ 17 pounds
- ○ 22 pounds

- ○ I don't know.

Release #: RB42742

NAEP #: 5-B42742-919-3

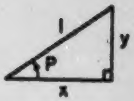
1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap: 17
1977-78 Package-Exercise: 03-27

Timing: (in seconds)
Exercise Total Time 25

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17	P	17.8	19.3	14.4*	18.2	19.2	18.8	16.8	20.1	20.8	19.5	15.2*
	SE	1.0	2.3	1.5	1.8	2.5	1.3	1.2	2.7	2.1	3.9	1.2
GRD 11	P	17.6	21.2	14.1	17.9	17.6	18.6	16.7	21.8	17.9	17.9	15.3
	SE	1.3	3.4	2.2	2.1	2.7	1.8	1.4	3.5	2.4	4.9	1.7



$(\sin P)^2 + (\cos P)^2 =$

○ x

○ y

○ $\frac{y}{x}$

● 1

○ I don't know.

Release #: EB50623

NAEP #: 5-E50623-919-12

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2C. Graphs and Tables

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Graph/Table

Overlap:	9	13
1977-78 Package-Exercise:	04-23	08-32
Timing: (in seconds) Exercise Total Time	82	69

			REGION				SEX		COMMUNITY SIZE (SOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 9	P	32.4	26.4*	23.8*	35.5	43.3*	31.1	33.7	29.1	36.5	31.0	32.3
	SE	1.8	2.8	3.4	3.6	3.7	2.2	2.1	2.7	5.3	7.6	2.8
GRD 4	P	37.5	31.0*	26.9*	43.9	46.5*	37.0	38.0	31.9	40.6	34.1	39.2
	SE	2.0	2.5	3.7	4.5	3.6	2.3	2.4	2.8	6.2	5.2	2.9
AGE 13	P	62.3	59.9*	60.5	68.9*	67.3	58.6*	66.2*	58.6	67.6*	70.4	60.4
	SE	1.4	3.6	2.6	2.2	3.5	2.0	1.7	3.0	3.0	7.2	2.6
GRD 8	P	68.7	60.9	66.4	75.8*	70.0	67.5	69.8	67.4	79.2	78.4	67.4
	SE	1.6	5.1	2.8	1.7	3.4	2.3	1.8	2.8	2.9	6.5	2.7
PART B												
AGE 9	P	11.8	10.4	8.0*	13.0	15.8	10.2*	13.6*	10.1	12.6	6.3*	13.5
	SE	1.2	2.3	1.8	2.3	3.0	1.2	1.6	1.8	1.8	2.2	1.8
GRD 4	P	13.6	11.5	9.5*	14.8	18.0	12.6	14.5	10.2*	13.9	7.8*	16.2
	SE	1.3	2.1	1.8	2.3	3.6	1.5	1.7	1.7	2.1	2.7	2.1
AGE 13	P	42.2	35.0*	38.3	46.0	48.6	38.8*	45.7*	40.2	43.0	52.6	41.1
	SE	2.0	3.3	3.4	3.4	5.4	2.0	2.5	3.2	3.6	6.6	3.3
GRD 8	P	48.3	42.0	44.0	53.6	51.8	45.8	50.5	46.5	47.4	53.1	48.8
	SE	2.2	4.1	3.4	3.4	5.5	2.2	2.7	3.8	3.4	6.2	3.6

A class of third grade students wants to make a table of pairs of numbers that will make this statement TRUE.

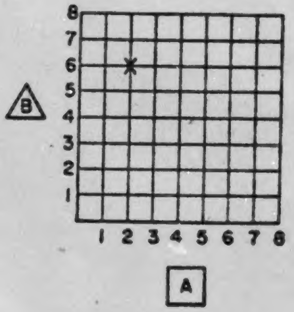
$$\boxed{A} + \triangle B = 8$$

Debbie put one pair in.

$\boxed{A}$	$\triangle B$
2	6

A. Put two more pairs in the table.

B. Put X's on the graph below for the pairs in your table. Debbie's pair (2,6) is already marked.



SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = GIVES TWO PAIRS OF NUMBERS WHOSE SUMS ARE 8

20 = OTHER

21 = GIVES ONE PAIR OF NUMBERS WHOSE SUM IS 8 AND ONE PAIR WHOSE SUM IS NOT 8

22 = GIVES ONE OR TWO PAIRS OF NUMBERS NEITHER OF WHICH HAS 8 AS ITS SUM

23 = GIVES ONLY ONE PAIR OF NUMBERS AND ITS SUM IS 8

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = CORRECTLY PLOTTED TWO PAIRS OF NUMBERS GIVEN IN PART A

20 = OTHER, PLOTTED WITH NO PAIRS IN A OR PLOTTED MORE PAIRS THAN GIVEN IN PART A

21 = PLOTTED ONE PAIR OF NUMBERS FROM PART A CORRECTLY AND ONE PAIR INCORRECTLY

22 = PLOTTED PAIRS OF NUMBERS FROM PART A INCORRECTLY

23 = GAVE ONE PAIR OF NUMBERS IN PART A AND PLOTTED IT CORRECTLY

39 = I DON'T KNOW.

Release #: RC10611

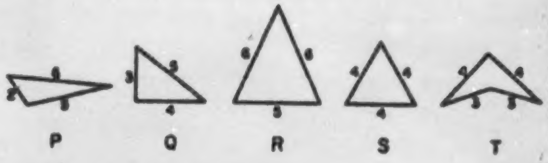
NAEP #: 5-C10611-919-23

1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 1A. Recall and Recognition

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap: 1977-78 Package-Exercise:	13 03-18	17 05-29
Timing: (in seconds) Exercise Total Time	179	183

	NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
		SE	WEST	CENT	NE	MALE	FEM	DC	PARC	HCTY	SMPL
PART A											
AGE 13 P	76.2	68.1*	74.0	82.1*	79.3	75.0	77.4	74.4	78.4	85.4*	74.1
SE	1.3	3.5	1.7	1.8	2.7	1.7	1.6	3.3	1.9	3.3	1.5
GRD 8 P	80.7	75.2*	79.6	85.6*	81.5	81.4	80.2	78.9	81.6	89.8*	79.2
SE	1.3	3.3	3.0	1.8	2.5	1.8	1.7	2.8	1.8	4.0	2.0
AGE 17 P	86.4	81.4*	85.8	88.2	88.7	87.2	85.6	84.3	88.3	91.8*	85.7
SE	0.9	2.4	1.9	1.4	1.6	1.3	1.3	2.0	1.6	1.6	1.4
GRD 11 P	87.2	82.6*	85.4	89.7	89.3	89.4	85.4	87.9	87.6	91.4*	86.0
SE	1.0	1.6	2.4	1.7	2.0	1.4	1.3	2.0	1.6	0.9	1.6
PART B											
AGE 13 P	41.3	34.3*	38.5	44.6	47.1*	43.6*	38.9*	42.4	48.0*	48.8*	35.8*
SE	1.6	3.7	3.5	3.0	2.4	2.2	1.6	3.5	2.6	3.2	2.5
GRD 8 P	47.3	40.4	46.0	52.2	49.0	51.1*	43.7*	50.0	52.7	52.3	41.8*
SE	1.7	4.0	3.4	3.7	2.8	2.3	1.9	4.1	3.2	3.9	2.5
AGE 17 P	58.6	47.6*	55.9	63.1	64.5	62.9*	54.6*	57.2	66.9*	60.9	55.0
SE	1.8	2.9	2.3	4.2	3.8	2.3	2.2	4.2	4.7	3.4	2.3
GRD 11 P	62.2	49.4*	59.2	66.9	69.0	68.1*	57.2*	61.9	70.1*	69.3	57.4*
SE	2.0	2.8	2.7	4.4	4.2	2.4	2.6	5.3	4.6	5.9	2.3
PART C											
AGE 13 P	21.4	22.0	21.0	21.1	21.4	21.0	21.7	21.4	22.6	17.8	21.5
SE	1.4	1.5	3.6	2.4	2.9	1.4	2.0	2.7	2.6	3.2	2.2
GRD 8 P	22.1	23.3	20.1	22.2	22.7	21.3	22.8	21.5	22.9	21.6	22.1
SE	1.4	2.0	3.6	2.5	2.9	1.5	2.4	2.9	3.0	3.9	2.1
AGE 17 P	33.9	39.2*	30.8	34.2	32.2	35.9	31.9	35.1	30.4	28.6	35.7
SE	1.3	2.2	2.6	2.5	3.0	1.8	1.7	2.5	3.0	4.9	2.3
GRD 11 P	34.9	40.3*	32.3	36.3	30.9	38.5*	31.8*	37.6	30.4	32.7	35.9
SE	1.3	2.4	2.5	2.4	3.0	1.9	1.5	2.5	2.7	5.1	2.2
PART D											
AGE 13 P	50.3	44.1	47.2	54.1	55.0*	52.4	48.1	47.3	55.3	59.5*	47.5
SE	2.0	6.2	3.0	3.4	1.7	2.4	2.1	4.4	2.8	4.8	2.8
GRD 8 P	[illegible]	52.0	54.5	63.3	60.1	62.0*	54.1*	55.0	62.9	68.9	54.1
SE	2.2	6.8	3.6	4.3	2.4	2.6	2.5	4.7	3.5	6.3	3.5
AGE 17 P	75.9	72.1	71.9	75.3	83.6*	79.2*	72.6*	71.5	77.3	80.7	76.7
SE	1.6	4.8	2.8	3.0	1.9	2.1	1.7	3.9	4.0	4.9	1.8
GRD 11 P	78.9	76.0	75.3	78.6	85.8*	84.5*	74.2*	75.8	79.4	85.4	79.2
SE	[illegible]	3.9	2.8	2.8	1.8	1.8	1.9	4.3	3.3	3.1	1.6



A. Which figures show a triangle?

○ Figures P and Q only

○ Figures P, R and S only

○ All of the figures

● All except Figure T

○ I don't know.

B. Which figure(s) shows an equilateral triangle?

○ Figure P only

○ Figure Q only

○ Figure R only

● Figure S only

○ Figures R and S only

○ I don't know.

EXERCISE: C13611 NAEP NO: C10611-

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART E												
AGE 13	P	26.5	31.8*	23.7	24.0	27.4	25.6	27.8	28.3	20.7*	20.0*	29.6*
	SE	1.1	2.2	1.8	1.8	2.8	1.3	1.5	3.0	3.1	1.6	1.2
GRD 8	P	25.1	28.8	23.2	22.4	26.2	24.5	25.6	24.8	18.0*	20.5	30.2*
	SE	1.4	2.1	3.2	1.9	3.3	1.5	1.9	3.4	3.1	2.3	1.8
AGE 17	P	21.8	24.8	21.4	19.1	23.3	21.2	22.4	21.4	23.2	22.1	21.3
	SE	1.1	2.7	2.6	1.9	2.2	1.6	1.6	2.6	2.7	2.8	1.4
GRD 11	P	21.7	25.5	20.4	19.0	24.4	21.0	22.4	20.8	22.1	18.1	22.7
	SE	1.2	2.8	2.7	2.0	2.7	1.9	1.8	2.4	3.1	3.3	1.8

(Continued)

C. Which figure(s) shows an isosceles triangle?

○ Figure R only
○ Figure S only
● Figures R and S only
○ Figures R and T only
○ Figures R, S and T only

○ I don't know.

D. Which figure(s) shows a right triangle?

○ Figure P only
● Figure Q only
○ Figure R only
○ Figure T only
○ Figures Q and T only

○ I don't know.

E. Which figure(s) shows a scalene triangle?

○ Figure P only
○ Figure R only
○ Figure S only
● Figures P and Q only

○ I don't know.

Release #: MC10711

NAEP #: 5-C10711-919-3

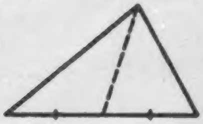
1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 1A. Recall and Recognition

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap: 17
1977-78 Package-Exercise: 11-31

Timing: (in seconds)
Exercise Total Time 41

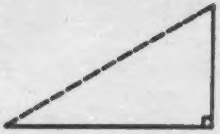
			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 17	P	31.0	33.3	24.8*	32.2	33.6	33.3	28.8	31.4	27.8	43.7	30.6
	SE	1.9	1.6	2.8	2.8	6.4	3.0	1.6	2.1	2.8	12.6	2.5
GRD 11	P	31.7	36.1	24.7*	31.4	35.5	35.1*	28.7	32.6	26.5	48.6	31.7
	SE	2.3	1.8	2.6	2.8	7.1	3.1	1.9	2.6	2.8	11.1	2.9
PART B												
AGE 17	P	56.7	50.0	50.1	61.9	62.1	59.0	54.4	55.2	63.6*	75.7*	50.3*
	SE	2.1	4.3	4.2	2.7	5.8	2.8	2.2	4.3	3.2	6.0	2.7
GRD 11	P	61.7	54.6	55.9	66.9	66.0	65.5*	58.3*	62.0	66.8	79.8*	55.2*
	SE	2.0	3.9	5.2	2.6	5.1	2.4	2.4	4.1	3.0	5.0	3.0



A. What is the dotted line in this figure called?

- ● median
- ○ altitude
- ○ angle bisector
- ○ hypotenuse

- ○ I don't know.



B. What is the dotted line in this figure called?

- ○ median
- ○ altitude
- ○ angle bisector
- ● hypotenuse

- ○ I don't know.

Release #: BC11111

NAEP #: 5-C11111-919-23

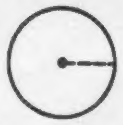
1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 1A. Recall and Recognition

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap:
1977-78 Package-Exercise: 13 / 04-17 17 / 03-21

Timing: (in seconds)
Exercise Total Time 45 48

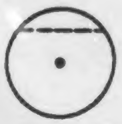
			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A												
AGE 13	P	57.3	48.6*	51.5	62.7*	70.0*	57.6	57.0	60.0	59.7	64.0	53.5
	SE	1.8	4.0	3.3	3.0	4.3	2.1	2.4	3.9	3.7	5.9	2.3
GRD 8	P	64.0	49.0*	58.0*	72.9*	73.7*	66.0	62.2	68.2	62.9	67.0	61.7
	SE	1.9	4.6	2.5	4.1	4.3	2.5	2.5	4.2	3.9	5.7	2.8
AGE 17	P	77.7	73.1	71.9*	82.1*	81.4	77.5	77.8	74.3	79.7	80.1	78.1
	SE	1.3	2.4	2.9	2.4	2.6	1.8	1.7	3.5	2.6	3.9	2.1
GRD 11	P	80.8	78.9	74.6	83.6	84.6*	81.2	80.5	78.6	81.8	79.5	81.5
	SE	1.3	1.9	3.6	2.3	1.9	1.7	1.8	3.0	2.5	3.9	2.0
PART B												
AGE 13	P	32.5	26.5	31.5	31.6	40.8	33.4	31.5	40.4*	26.8	34.4	30.5
	SE	2.2	2.7	2.7	3.6	7.4	2.2	2.7	4.4	3.4	8.2	2.5
GRD 8	P	35.1	27.8*	35.3	33.1	43.0	37.3	32.9	43.8*	29.2	37.1	32.9
	SE	2.6	3.0	3.1	4.1	8.2	2.8	3.0	5.0	4.4	9.6	2.9
AGE 17	P	54.2	45.7*	46.5*	62.1*	58.5	57.2*	51.4*	53.7	62.5*	62.2	49.1*
	SE	1.8	1.7	4.1	2.8	4.3	1.8	2.4	4.0	3.0	6.9	2.7
GRD 11	P	58.6	51.7*	50.5*	65.4*	62.7	62.6*	55.1*	59.5	65.3*	72.1*	53.1*
	SE	2.0	1.5	3.9	3.2	5.5	2.0	2.5	4.5	3.5	5.5	2.4
PART C												
AGE 13	P	35.3	34.8	31.2	35.9	40.1	36.1	34.5	42.4*	31.0	34.0	33.8
	SE	1.7	1.9	3.1	3.0	5.4	2.0	2.3	3.3	4.1	5.8	2.2
GRD 8	P	37.9	35.7	34.7	39.0	41.9	41.0	35.0	46.6*	33.7	38.0	35.1
	SE	2.0	3.3	3.4	3.5	5.7	2.7	2.4	4.3	4.7	6.1	2.4
AGE 17	P	58.9	52.8*	50.8*	64.8*	64.1	60.0	57.8	57.6	66.4*	63.1	54.9*
	SE	1.5	2.3	2.9	2.6	3.5	1.8	2.0	3.2	2.9	7.2	2.1
GRD 11	P	62.5	58.4	54.8*	66.5	67.8	64.8	60.5	61.5	68.9*	72.1	58.4*
	SE	1.7	2.0	3.6	3.0	4.2	2.0	2.3	3.6	3.1	5.5	2.2



A. What is the dotted line in this circle called?

● radius
○ diameter
○ chord
○ tangent

○ I don't know.

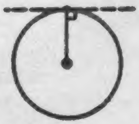


B. What is the dotted line in this circle called?

○ radius
○ diameter
● chord
○ tangent

○ I don't know.

(Continued)



C. What is the dotted line on this circle called?

○ radius
○ diameter
○ chord
● tangent

○ I don't know.

Release #: RC11911

NAEP #: 5-C11911-919-123

1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 1A. Recall and Recognition

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 9 13 17
1977-78 Package-Exercise: 06-35 09-34 05-12

Timing: (in seconds)
Exercise Total Time 34 19 20

Which one of the following objects is most like a geometric plane?

● A table top

○ A water glass

○ An ice cream cone

○ A shoe box

○ I don't know.

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 9	P	20.9	23.7	21.4	18.8	20.5	22.7	19.2	19.8	23.5	15.6*	21.3
	SE	1.1	1.9	1.5	2.7	2.3	1.8	1.3	1.8	2.6	2.1	1.4
GRD 4	P	23.3	23.1	20.2	18.0	20.5	22.3	18.5	19.2	23.9	13.7*	20.2
	SE	1.3	1.9	2.6	3.1	2.5	2.2	1.4	2.1	2.7	2.5	1.7
AGE 13	P	50.2	42.8*	48.4	54.3	53.5	53.2*	47.0*	47.2	53.3	50.8	50.3
	SE	1.8	2.6	1.5	4.3	4.1	1.8	2.6	3.5	3.5	4.9	3.2
GRD 8	P	55.6	46.9*	56.6	59.3	57.9	60.6*	51.0*	55.2	57.9	56.5	54.5
	SE	2.0	3.3	2.8	3.9	4.5	2.2	2.8	4.3	4.4	4.2	3.3
AGE 17	P	72.8	68.0	69.0	74.3	78.6*	75.7*	70.0*	69.9	76.0	75.9	72.3
	SE	1.7	3.2	3.1	3.3	3.3	1.8	2.1	4.3	4.2	2.5	2.0
GRD 11	P	74.2	69.6	71.4	75.8	78.5	78.4*	70.5*	71.7	78.5	75.2	73.2
	SE	2.0	2.5	4.5	3.6	3.9	2.2	2.3	5.0	5.1	2.8	2.1

Release #: RC12411

NAEP #: 5-C12411-919-1

1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 1A. Recall and Recognition

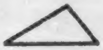
Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

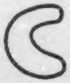
Overlap:
1977-78 Package-Exercise: $\frac{9}{03\text{-}23}$

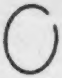
Timing: (in seconds)
Exercise Total Time 30

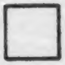
			REGION				SEX		COMMUNITY SIZE (DOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A											
AGE 9 P	97.1	94.5	97.1	98.9*	97.4	97.4	96.8	95.5	98.3	94.7	97.8
SE	0.6	1.7	0.8	0.5	0.5	0.6	0.6	1.2	0.7	1.9	0.5
GRD 4 P	97.9	95.8	97.9	99.5*	98.3	98.5*	97.4	96.1	98.5	97.2	98.6
SE	0.4	1.7	1.0	0.3	0.6	0.5	0.6	1.3	0.9	1.3	0.6
PART B											
AGE 9 P	98.9	98.1	98.7	99.6*	98.8	98.8	98.9	98.4	99.7*	97.4	99.0
SE	0.2	0.5	0.5	0.2	0.6	0.4	0.3	0.5	0.2	1.5	0.3
GRD 4 P	99.2	98.5	98.9	100.0*	99.4	99.5	99.0	98.8	99.9*	98.9	99.1
SE	0.2	0.4	0.6	0.0	0.3	0.3	0.3	0.5	0.0	1.0	0.2

A. Which figure is OPEN?

○ 

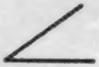
○ 

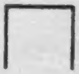
● 

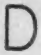
○ 

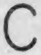
○ I don't know.

Which figure is CLOSED?

○ 

○ 

● 

○ 

○ I don't know.

Release #: RC20532

NAEP #: 5-C20532-919-23

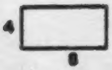
1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

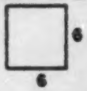
Overlap:
1977-78 Package-Exercise: 13 04-10 17 09-16

Timing: (in seconds)
Exercise Total Time 56 47

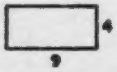
		REGION				SEX		COMMUNITY SIZE (DOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A											
AGE 13 P	65.4	65.3	59.1*	69.9	67.2	63.7	67.2	68.0	60.8	59.8	67.1
SE	1.5	2.1	3.4	2.8	2.5	2.1	1.8	3.1	3.4	6.3	1.6
GRD 8 P	67.3	66.7	61.3*	72.0	69.0	65.0	69.4	71.4	62.7	60.3	68.7
SE	1.5	1.8	3.3	3.4	3.2	2.5	1.9	3.9	3.1	6.1	1.7
AGE 17 P	71.1	72.7	68.2	70.8	73.1	72.2	70.1	64.6	73.9	79.3*	70.8
SE	1.5	2.4	3.2	2.9	3.0	1.9	2.3	4.1	3.0	2.4	1.8
GRD 11 P	72.9	75.1	69.3	73.6	73.7	75.1	70.9	66.0	76.5	82.7*	71.5
SE	1.7	3.1	3.8	2.8	3.9	1.9	2.9	4.3	2.9	2.8	2.5
PART B											
AGE 13 P	57.9	51.5	55.7	61.5	62.1	57.3	58.5	55.9	59.4	63.9	57.2
SE	1.4	3.9	2.1	2.4	3.0	2.3	1.8	3.2	2.1	3.2	2.3
GRD 8 P	61.7	55.9	59.8	65.7	64.3	60.8	62.6	59.7	63.7	64.6	61.3
SE	1.8	5.3	3.5	2.5	3.2	2.7	2.0	3.5	2.5	4.7	2.9
AGE 17 P	75.5	71.4*	74.6	77.2	77.8	75.5	75.6	70.3	79.0	71.1	76.8
SE	1.1	2.1	2.6	2.0	2.4	1.7	1.7	3.4	2.7	4.5	1.3
GRD 11 P	77.7	78.6	75.9	79.6	79.3	78.2	77.3	74.9	81.7	71.8	77.7
SE	1.3	3.3	2.9	2.0	2.6	2.1	2.1	3.7	2.6	5.9	1.3
PART C											
AGE 13 P	32.5	38.9*	31.1	31.4	29.2	33.9	31.1	35.1	27.2*	37.6	32.8
SE	1.1	1.2	2.2	1.6	3.0	1.6	1.5	2.1	2.7	3.3	1.4
GRD 8 P	30.2	36.4*	28.7	28.7	27.8	31.2	29.2	33.7	28.1	35.9	30.4
SE	1.6	2.2	3.7	2.7	3.8	2.3	2.0	2.7	3.7	5.2	1.9
AGE 17 P	28.4	27.4	22.2*	29.1	34.3*	33.5*	23.4*	25.7	31.0	33.2	26.9
SE	1.3	2.2	2.1	2.9	2.8	1.8	1.9	2.5	2.8	4.4	1.7
GRD 11 P	28.1	24.4	23.0*	29.5	33.0	33.0*	23.0*	25.8	30.7	33.4	26.6
SE	1.8	2.2	2.5	2.7	3.3	1.8	2.1	3.8	2.9	4.7	2.2
PART D											
AGE 13 P	88.7	83.4*	87.3	91.7*	91.6*	89.5	87.8	89.1	92.3*	85.3	87.3
SE	0.8	2.4	1.6	1.0	1.1	1.1	1.3	1.4	1.3	3.1	1.3
GRD 8 P	90.1	84.5*	88.9	93.6*	92.5	91.2	89.1	90.7	92.4	88.9	88.7
SE	1.0	3.0	2.1	1.3	1.2	1.3	1.4	1.6	1.5	2.1	1.8
AGE 17 P	92.6	90.3*	93.0	93.5	93.1	92.6	92.6	91.1	94.4*	93.5	92.1
SE	0.5	1.3	0.9	0.8	1.2	0.8	0.7	1.3	1.0	2.1	0.7
GRD 11 P	93.2	91.5	93.4	93.6	93.8	93.2	93.2	93.0	93.4	93.7	93.1
SE	0.7	1.6	1.4	0.9	1.7	1.1	0.9	1.4	1.3	2.3	0.9



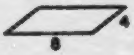
Is each figure below congruent to the figure above?

A. 

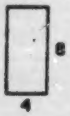
Yes ○ No ● I don't know. ○

B. 

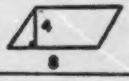
Yes ○ No ● I don't know. ○

C. 

Yes ○ No ● I don't know. ○

D. 

Yes ● No ○ I don't know. ○

E. 

Yes ○ No ● I don't know. ○

```
EXERCISE: C20532        NAEP NO: C20532-

                   |          REGION              |     SEX       |  COMMUNITY SIZE (DOC)
                   |                              |               |
              NAT  |  SE   WEST   CENT    NE      | MALE    FEM   |  BC   FABC  HCTY  SMPL

  PART I

AGE 13 P     49.7    53.3   46.6   45.3   50.2     51.1   48.2    53.1  49.2  55.7  47.1
       SE     1.2     2.8    2.1    2.3    1.9      1.5    1.7     2.2   3.0   5.4   1.9
GRD  8 P     47.6    49.5   45.7   45.0   50.7     48.2   47.1    52.4  45.3  58.7* 44.2
       SE     1.8     4.3    4.3    3.3    2.2      2.2    2.2     2.8   3.8   4.9   2.6

AGE 17 P     50.4    49.6   46.5*  50.6   54.6*    54.2*  46.7*   51.0  50.2  48.4  50.7
       SE     0.9     1.9    2.3    1.1    2.2      1.5    1.6     1.6   2.4   5.4   1.4
GRD 11 P     50.7    48.5   47.2   52.1   53.8     54.6*  47.2*   52.2  49.8  46.6  51.8
       SE     1.3     3.4    3.3    1.6    3.0      2.0    1.9     2.1   3.5   7.7   1.7
```

Release #: RC20643

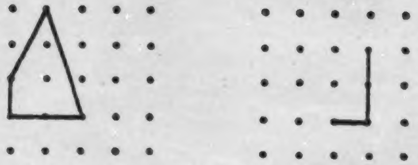
NAEP #: 5-C20643-919-23

1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 4D. Non-routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture

Overlap: 1977-78 Package-Exercise:	13 05-22	17 10-14
Timing: (in seconds) Exercise Total Time	55	29

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 13	P	28.1	17.7*	29.8	30.3	33.1	31.2*	24.9*	21.4*	39.4*	35.0*	25.2
	SE	1.5	2.3	3.8	2.8	3.2	2.1	1.7	3.6	3.4	3.1	2.2
GRD 8	P	31.9	21.8*	32.6	34.4	36.5	36.0*	28.3*	26.0	43.4*	34.8	28.5
	SE	1.7	2.8	4.2	2.7	3.6	2.7	2.1	4.2	3.6	4.0	2.4
AGE 17	P	30.9	26.1	29.4	35.5*	31.3	39.3*	22.9*	30.4	36.0	38.0	26.9*
	SE	1.4	3.3	2.9	2.1	3.0	1.9	1.8	4.0	2.7	5.5	1.8
GRD 11	P	32.7	25.6*	30.3	37.7*	35.0	42.9*	23.4*	32.2	37.4	41.5	28.6
	SE	1.7	3.8	3.6	2.7	3.8	2.2	2.2	4.5	3.7	6.2	2.1



Finish drawing the figure on the right so it is congruent to the figure on the left.

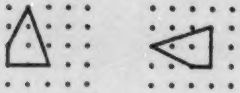
C20643-23

SCORING GUIDE

Categories are listed below.

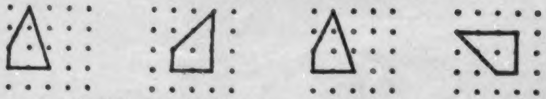
00 = NO RESPONSE

11 =

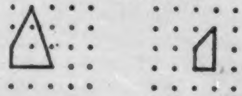


20 = OTHER

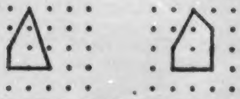
21 =



22 =

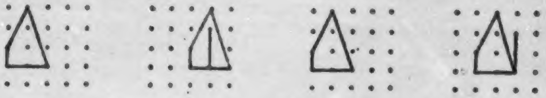


23 =



24 = DREW OTHER CONGRUENT FIGURES BY ADDING TO LEFT FIGURE

25 = DREW A FIGURE CONGRUENT TO GIVEN FIGURE WITH EXTRA LINE



39 = I DON'T KNOW.

Release #: RC30232

NAEP #: 5-C30232-919-12

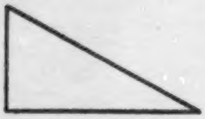
1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

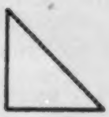
Overlap: 9 13
1977-78 Package-Exercise: 01-11 08-26

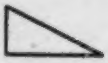
Timing: (in seconds)
Exercise Total Time 20 19

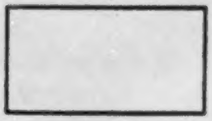
			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	DC	PARC	RCTY	SBRL
AGE 9	P	85.5	80.3*	84.1	87.2	90.1*	88.2*	82.7*	77.9*	89.6*	88.5	86.6
	SE	1.1	3.0	2.4	1.3	1.8	1.1	1.5	2.8	1.9	1.6	1.6
GRD 4	P	87.4	82.5*	86.2	89.4	91.1	91.4*	84.0*	81.6*	91.8*	90.1	87.9
	SE	1.3	2.4	1.8	1.7	1.9	1.1	1.5	2.6	1.8	2.4	1.6
AGE 13	P	94.1	92.1	95.9*	94.7	91.7	94.2	94.1	92.1	95.1	94.8	94.6
	SE	0.5	1.2	0.6	0.9	1.4	0.8	0.7	1.7	1.8	2.2	0.7
GRD 8	P	95.8	94.7	98.0*	96.1	94.6	96.8	95.0	96.4	95.5	94.6	95.9
	SE	0.6	1.4	0.6	0.9	1.5	0.8	0.8	1.1	1.2	1.9	1.0

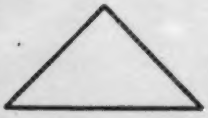


Which one of the following figures is SIMILAR to the above triangle? Fill in the oval beside the one you choose.

○ 

● 

○ 

○ 

○ I don't know.

Release #: RC30411

NAEP #: S-C30411-919-23

1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 1A. Recall and Recognition

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 13/09-20 17/05-20

Timing: (in seconds)
Exercise Total Time 64 64

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SBPL
PART A												
AGE 13	P	31.6	28.1	33.3	32.7	31.7	33.3	29.8	32.1	30.8	36.3	30.5
	SE	1.4	2.3	2.6	2.8	3.0	1.4	2.1	3.4	2.9	2.8	1.9
GRD 8	P	32.2	28.2	30.9	35.0	33.5	34.3	30.3	32.2	30.3	38.0	31.8
	SE	1.8	3.1	2.5	4.7	2.9	1.9	2.4	5.2	2.8	5.0	2.5
AGE 17	P	43.6	40.6	40.9	49.7*	40.6	47.4*	39.9*	40.3	50.2	36.7	43.2
	SE	1.5	3.5	3.1	2.2	2.9	2.0	1.6	3.6	4.0	4.3	1.9
GRD 11	P	46.4	43.7	43.4	52.3*	42.8	52.2*	41.3*	44.7	52.3	34.1*	46.3
	SE	1.8	4.1	4.1	2.5	3.8	2.3	2.1	3.7	4.8	6.2	2.3
PART B												
AGE 13	P	57.4	56.7	57.1	58.5	57.2	57.0	57.9	58.0	57.2	62.4	56.1
	SE	1.4	3.3	2.9	2.4	2.9	1.9	1.7	3.2	3.5	6.2	1.6
GRD 8	P	58.7	57.2	61.7	59.1	57.1	59.0	58.4	60.1	55.7	62.3	58.5
	SE	1.6	3.8	3.3	2.5	3.2	2.4	2.1	3.1	3.9	6.6	2.2
AGE 17	P	68.4	63.2	65.6	70.5	73.3*	71.0*	6.0*	73.5	71.1	63.8	65.1*
	SE	1.6	3.6	3.7	2.8	2.2	1.9	1.9	3.0	3.9	4.2	2.1
GRD 11	P	69.5	65.5	64.7	70.0	77.3*	74.0*	65.6*	75.2	73.9	79.3	65.7
	SE	1.7	4.4	3.7	2.6	2.1	2.0	2.1	3.2	3.5	4.7	2.5
PART C												
AGE 13	P	44.6	48.7	40.6	46.1	42.6	43.4	45.7	46.1	40.2	49.3	42.7
	SE	1.3	2.6	2.3	2.0	3.3	1.6	1.9	2.9	3.2	3.3	1.7
GRD 8	P	45.2	49.8	42.9	45.4	43.3	45.0	45.4	45.3	45.0	54.1*	43.2
	SE	1.6	3.4	3.7	3.0	3.2	2.2	2.4	3.2	3.6	2.9	2.4
AGE 17	P	64.9	63.4	59.3*	68.1	67.6	66.1	63.7	62.5	68.2	64.8	64.6
	SE	1.5	2.5	3.1	3.2	2.5	2.1	1.9	3.1	3.7	4.4	1.9
GRD 11	P	68.8	68.0	64.4	70.7	71.3	70.1	67.6	66.9	70.6	68.1	69.0
	SE	1.8	2.8	4.0	3.4	3.0	2.3	2.2	3.4	4.4	4.9	2.0
PART D												
AGE 13	P	61.7	60.9	58.8	62.0	64.7	60.5	62.9	61.2	65.0	62.2	60.2
	SE	1.2	2.7	2.4	2.4	2.2	1.8	1.6	3.0	2.5	4.2	1.7
GRD 8	P	62.3	63.8	58.9	62.7	63.2	61.3	63.1	63.3	64.1	60.3	61.1
	SE	1.6	3.3	3.2	3.7	2.6	2.3	1.9	3.6	2.9	6.5	2.3
AGE 17	P	73.6	72.5	73.7	74.0	74.0	76.0	71.4	76.9	75.7	71.2	71.3
	SE	1.1	2.2	2.0	1.8	2.7	1.5	1.6	2.7	2.5	4.1	1.8
GRD 11	P	74.3	73.4	73.6	74.4	75.7	76.7	72.3	79.4*	75.6	73.7	71.1
	SE	1.1	2.3	2.5	1.8	2.7	1.8	1.7	2.7	2.6	6.2	1.9

Two triangles are SIMILAR. Indicate if each of the following statements is true or false. Fill in one oval in each box.

		True	False	I don't know.
A.	Their corresponding sides MUST be congruent.	○	●	○
B.	Their corresponding angles MUST be congruent.	●	○	○
C.	They MUST have the same area.	○	●	○
D.	They MUST have the same shape.	●	○	○

Release #: RC30842

NAEP #: S-C30842-919-23

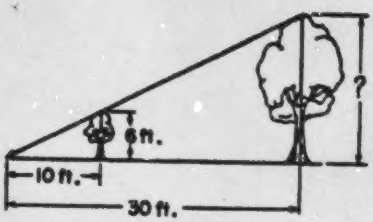
1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap:
1977-78 Package-Exercise: $\frac{13}{01-24}$ $\frac{17}{05-24}$

Timing: (in seconds)
Exercise Total Time 39 39

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	RC	FARC	HCTY	SMPL
AGE 13	P	36.4	30.9	40.3*	37.0	37.0	40.5*	32.3*	31.0*	43.4*	43.0	34.1
	SE	1.3	3.3	1.7	3.0	2.3	1.8	1.7	2.5	2.3	4.1	1.6
GRD 8	P	39.1	34.1	40.9	40.5	40.1	44.2*	34.5*	34.2	44.7*	48.6*	35.9
	SE	1.6	4.0	2.8	3.8	2.6	2.2	2.0	3.8	2.6	4.9	1.9
AGE 17	P	53.2	43.7*	50.8	55.1	50.9	57.5*	43.3*	46.3	59.8*	42.6	48.9
	SE	1.8	2.2	3.3	3.7	4.1	2.2	2.1	3.9	4.7	5.7	1.8
GRD 11	P	51.9	41.7*	51.3	57.2	53.2	61.2*	44.0*	49.7	63.3*	43.7	50.4
	SE	2.0	2.7	3.2	3.9	5.0	2.5	2.3	5.1	4.8	5.4	1.9



The picture above shows how José used a short tree to find the height of the tall tree. What answer should José get?

○ 12 feet
● 18 feet
○ 20 feet
○ 36 feet
○ 46 feet

○ I don't know.

Release #: RC50146

NAEP #: 5-C50146-919-23

1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

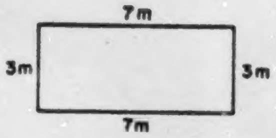
Overlap:

	13	17
1977-78 Package-Exercise:	07-26	01-15

Timing: (in seconds)

Exercise Total Time	49	40

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 13	P	14.2	17.1	12.6	15.3	11.7	16.2	12.2	15.3	13.6	18.1	13.3
	SE	1.0	2.0	2.1	1.3	2.8	1.8	1.1	1.8	2.1	4.4	1.4
GRD 8	P	13.3	14.9	12.7	17.2	7.9*	14.4	12.4	12.2	13.8	14.3	13.5
	SE	1.1	1.5	2.9	2.1	1.8	1.7	1.4	1.4	2.8	3.2	1.5
AGE 17	P	19.5	18.4	21.6	17.5	[illegible].9	22.2*	16.9*	20.0	19.7	22.5	18.6
	SE	1.0	2.0	1.7	1.7	2.4	1.6	1.4	2.1	2.4	4.2	1.2
GRD 11	P	19.8	17.3	22.4	17.4	22.4	21.9	18.0	20.5	17.7	24.7	19.4
	SE	1.2	2.9	2.0	2.2	3.1	2.2	1.7	2.6	3.4	5.7	1.5



In the figure above, the lengths of the sides are shown. Which of the following guarantees the figure is a rectangle?

○ The opposite sides are congruent.

○ The opposite angles are congruent.

● The angles are right angles.

○ The opposite sides are parallel.

○ I don't know.

Release #: RC50746

NAEP #: S-C50746-919-3

1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 4D. Reasoning and Making Judgments

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 03-20

Timing: (in seconds)
Exercise Total Time 60

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	FABC	HCTY	SMPL
PART A												
AGE 17	P	72.9	68.1*	65.3*	77.8*	78.9*	75.1	70.8*	70.2	76.0	76.2	72.2
	SE	1.4	2.5	3.6	2.1	2.2	1.7	1.8	2.8	2.2	4.3	2.2
GRD 11	P	74.1	71.0	65.0*	78.0*	80.2*	76.8	71.7	74.8	76.6	74.[illegible]	72.2
	SE	1.3	2.2	3.3	2.0	2.9	1.8	2.0	3.0	2.6	5.6	2.1
PART B												
AGE 17	P	61.8	55.3*	56.4	69.0*	63.4	64.4*	59.4*	59.8	67.6*	74.4*	58.5*
	SE	1.6	2.6	4.3	2.5	3.2	2.0	2.1	2.8	3.2	5.6	2.4
GRD 11	P	66.0	61.3	61.6	71.4*	66.8	70.3*	62.3*	62.7	69.6	77.3*	64.6
	SE	1.6	2.4	4.8	2.3	3.4	1.9	2.2	2.5	3.4	5.2	2.6
PART C												
AGE 17	P	32.0	29.4	23.1*	3[illegible].8*	32.9	34.9*	29.2*	33.4	32.7	36.3	30.5
	SE	1.4	1.7	1.6	3.3	2.5	1.6	2.0	2.6	3.6	3.6	1.6
GRD 11	P	33.5	30.0	25.1*	40.1*	35.6	37.8*	29.9*	35.5	32.9	34.5	32.8
	SE	1.5	2.6	1.3	3.3	2.8	1.9	2.1	3.2	3.6	4.9	1.6
PART D												
AGE 17	P	64.4	60.8	58.5*	70.5*	65.3	65.1	63.7	62.4	69.1*	70.3	62.2
	SE	1.3	2.4	3.2	1.6	3.2	1.7	1.8	2.6	2.6	6.2	1.9
GRD 11	P	67.0	65.8	60.2*	71.8*	67.8	68.3	65.8	65.2	70.0	76.2	65.3
	SE	1.6	2.1	3.6	1.7	4.8	1.9	2.0	2.8	3.1	7.5	2.3

Is each statement TRUE or FALSE? Fill in one oval on each line.

		True	False	I don't know.
A.	Every parallelogram is a square.	○	●	○
B.	Every square is a parallelogram.	●	○	○
C.	Every square is a rectangle.	●	○	○
D.	Every rectangle is a parallelogram.	●	○	○

Release #: NC60324

NAEP #: S-C60324-919-23

1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 2D. Geometric Manipulations

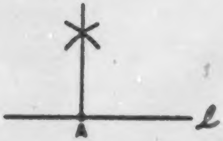
Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

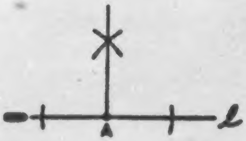
Overlap:
1977-78 Package-Exercise: 13/03-21 17/06-28

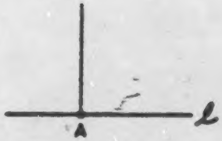
Timing: (in seconds)
Exercise Total Time 33 32

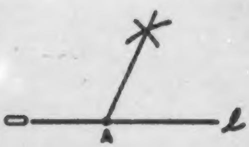
			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 13	P	13.6	12.8	11.0	16.2	13.9	14.6	12.4	14.1	13.1	25.4	11.1*
	SE	1.2	1.8	1.6	3.3	1.7	1.5	1.3	2.3	1.9	7.2	1.1
GRD 8	P	15.1	13.4	11.7	19.4	15.1	16.8	13.5	16.2	15.3	30.8	11.0*
	SE	1.5	2.5	2.2	4.3	1.9	1.9	1.5	2.4	2.4	9.2	1.6
AGE 17	P	37.9	28.6*	37.9	44.0*	36.4	40.6*	35.2*	37.9	41.8	46.3	34.8
	SE	1.6	3.5	3.6	3.0	2.6	2.0	2.0	4.0	2.8	6.0	2.3
GRD 11	P	40.7	32.9	39.0	47.5*	38.7	45.9*	36.2*	43.0	42.0	46.8	38.2
	SE	1.8	4.6	3.3	3.4	2.3	2.2	2.2	4.0	3.7	6.1	2.3

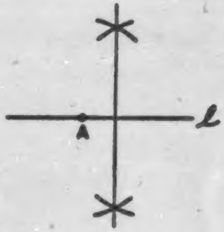
Which one of the following illustrates the construction of a perpendicular to line ℓ at point A using a compass and straightedge? Fill in the oval beside the one you choose.

○


●


○


○


○


○ I don't know.

Release #: RC79124

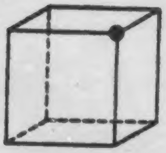
NAEP #: S-C70124-919-123

1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 2D. Geometric Manipulations

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap: 1977-78 Package-Exercise:	9 04-26	13 06-37	17 09-31
Timing: (in seconds) Exercise Total Time	114	76	67

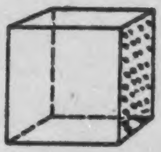
		REGION				SEX		COMMUNITY SIZE (DOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A											
AGE 9 P	63.0	53.7*	62.3	65.1	70.8*	64.7	61.2	54.6*	67.7	64.2	64.5
SE	1.4	2.3	2.8	2.7	3.0	2.2	1.7	3.3	3.1	4.3	2.0
GRD 4 P	65.6	55.3*	61.6	69.9	74.3*	67.6	63.8	56.3*	68.2	65.2	68.6
SE	1.8	3.8	3.5	2.9	3.2	2.7	2.2	4.6	3.7	4.9	2.8
AGE 13 P	84.5	79.1*	85.8	85.6	87.0	86.0	83.1	81.1	87.0	87.4	84.5
SE	1.1	3.0	2.1	1.8	1.6	1.1	1.5	2.1	1.8	3.8	1.6
GRD 8 P	86.3	86.6	85.1	85.2	88.3	88.3	84.6	83.6	87.1	85.6	87.4
SE	1.1	2.4	2.2	2.5	1.9	1.3	1.6	2.5	2.0	3.4	1.6
AGE 17 P	93.5	87.9	90.2	92.1	90.7	90.5	90.4	86.4*	90.6	93.7	91.7
SE	0.8	1.5	1.1	1.4	2.0	0.9	1.1	2.0	2.1	2.0	0.8
GRD 11 P	92.3	92.2	91.2	92.7	93.1	92.7	92.0	88.0*	92.3	96.5*	93.5
SE	0.7	1.8	1.1	1.4	1.6	0.9	1.1	2.2	1.7	1.6	0.8
PART B											
AGE 9 P	41.7	38.2	41.9	42.8	43.7	42.5	40.9	31.5*	48.1*	48.6*	42.1
SE	1.5	2.6	2.7	3.4	3.1	2.1	2.1	3.1	2.2	3.7	2.2
GRD 4 P	46.0	43.1*	46.9	47.2	49.4	47.1	44.9	34.7*	59.9	56.9*	46.4
SE	1.6	2.6	1.9	3.7	3.4	2.2	2.2	3.2	2.6	5.8	2.2
AGE 13 P	75.4	66.5*	78.5	77.9	77.5	78.0*	72.8*	69.5*	78.7	74.6	76.9
SE	1.3	3.5	2.7	2.3	1.6	1.6	1.8	2.9	2.5	4.9	2.1
GRD 8 P	79.6	73.3	82.1	80.4	81.6	83.0*	76.6*	72.8*	83.6	78.9	80.9
SE	1.2	3.6	2.4	2.3	1.2	1.8	1.5	3.0	2.1	5.3	1.8
AGE 17 P	84.1	76.4*	86.5	87.9*	83.2	83.8	84.5	80.4	87.5*	80.8	84.4
SE	1.0	1.2	2.3	1.8	2.4	1.3	1.3	2.9	1.5	2.1	1.8
GRD 11 P	86.5	81.8*	88.3	88.6	85.1	86.8	86.2	81.2*	90.0*	82.2	87.4
SE	1.1	1.8	1.8	2.1	2.7	1.5	1.4	2.9	1.1	2.7	1.4
PART C											
AGE 9 P	36.2	26.8*	33.3	41.4*	43.0*	37.5	34.9	30.1*	42.3	33.5	36.9
SE	1.7	3.4	3.9	2.6	3.5	2.7	1.8	2.7	3.6	7.5	2.6
GRD 4 P	40.0	27.7*	36.7	46.7*	47.4*	42.7	37.5	32.0*	43.5	38.2	42.2
SE	1.7	3.5	3.3	2.8	2.9	2.4	1.8	2.9	4.1	6.7	2.5
AGE 13 P	72.7	64.5*	72.3	76.5	76.8	74.5	70.9	65.9*	78.7*	70.7	73.4
SE	1.3	3.1	2.3	2.7	2.0	1.5	1.6	3.2	2.4	6.1	2.0
GRD 8 P	78.0	74.6	77.9	79.5	79.2	80.9*	75.4*	69.4*	82.8*	79.8	79.3
SE	1.3	3.4	2.2	2.7	2.2	1.7	1.5	3.3	2.4	6.2	1.8



A. The dot is on one of the corners of this cube. How many corners does the cube have?

- ○ 4
- ○ 6
- ○ 7
- ● 8
- ○ 16

○ I don't know.



B. One face is shaded on this cube. How many faces does the cube have?

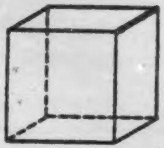
- ○ 3
- ● 6
- ○ 8
- ○ 12

○ I don't know.

EXERCISE: C70124 NAEP NO: C70124-

		NAT	REGION SE	WEST	CENT	NE	SEX MALE	FEM	COMMUNITY SIZE (DOC) BC	FABC	MCTY	SMPL
PART C												
AGE 17	P	85.6	77.4*	86.0	89.7*	86.7	87.6	83.7	78.5*	91.6*	87.1	84.8
	SE	1.3	2.1	3.0	2.2	3.1	1.4	1.9	3.7	2.0	2.6	1.5
GRD 11	P	88.8	86.0	88.3	90.4	89.0	91.2*	86.6*	79.5*	94.7*	89.4	88.9
	SE	1.3	1.5	2.8	2.0	3.2	1.3	1.7	3.9	1.2	2.4	1.5

(Continued)



C. One edge is drawn with a thick line on this cube. How many edges does the cube have?

○ 3
○ 5
○ 9
● 12

○ I don't know.

Release #: RC73424

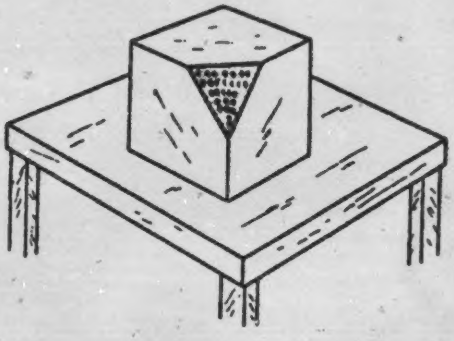
NAEP #: 5-C70424-919-123

1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 2D. Geometric Manipulations

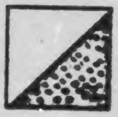
Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

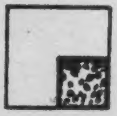
Overlap:	9	13	17
1977-78 Package-Exercise:	01-05	02-30	01-11
Timing: (in seconds) Exercise Total Time	40	34	34

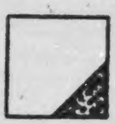
		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	RC	PARC	MCTY	SMPL
AGE 9	P	70.3	68.1	67.7	72.0	73.1	74.8*	65.0*	64.1*	71.9	69.9	72.7
	SE	1.2	3.1	2.1	1.7	3.1	1.5	1.6	2.1	2.2	4.0	2.2
GRD 4	P	71.7	68.3	70.5	74.2	73.4	76.4*	67.5*	67.5	73.1	71.7	73.0
	SE	1.5	3.4	3.1	1.1	3.6	1.5	2.0	2.1	2.6	5.1	2.6
AGE 13	P	75.5	72.0	75.5	80.9*	71.9	83.0*	67.5*	71.6	81.6*	79.2	73.5
	SE	1.5	2.7	3.1	2.0	3.6	1.5	1.9	3.4	2.4	5.3	2.0
GRD 8	P	76.9	72.6	76.9	82.5*	75.0	86.0*	68.3*	72.5	81.6	84.9*	74.7
	SE	1.6	2.6	3.8	2.8	3.7	1.4	2.1	3.2	2.7	4.2	2.2
AGE 17	P	78.7	74.9	80.2	80.4	77.9	88.6*	69.1*	77.1	77.3	84.7*	79.0
	SE	1.2	2.6	2.4	1.8	3.0	1.2	1.5	2.4	2.1	2.1	1.7
GRD 11	P	79.4	76.0	80.9	81.5	77.4	90.0*	70.4*	78.7	77.5	84.9*	79.7
	SE	1.2	2.8	2.6	1.9	2.9	1.3	1.6	2.4	2.6	2.5	1.8

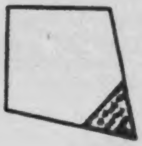


The figure above shows a block with one corner cut off and shaded. Which of the following drawings shows how this block would look when viewed from directly above it? Fill in the oval beside the one you choose.

○ 

○ 

● 

○ 

○ I don't know.

Release #: RC71324

NAEP #: S-C71324-919-1

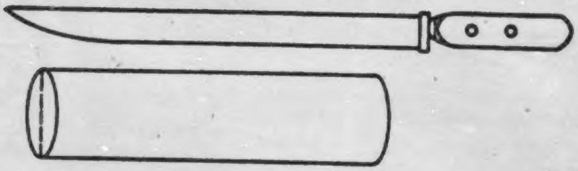
1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 2D. Geometric Manipulations

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

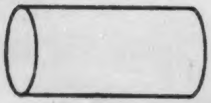
Overlap: 9
1977-78 Package-Exercise: 05-16

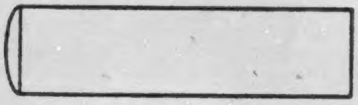
Timing: (in seconds)
Exercise Total Time 35

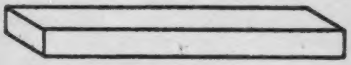
			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 9	P	90.7	86.8*	89.7	92.1	93.8*	93.5*	87.8*	88.6	94.5*	92.8	89.1
	SE	0.8	1.8	1.9	1.2	1.3	0.7	1.6	2.0	1.3	2.9	1.0
GRD 4	P	92.1	89.6	92.6	92.1	93.8	94.4	90.0	92.2	95.8*	93.2	89.9
	SE	0.9	2.2	2.4	1.8	1.3	1.0	1.7	1.9	1.2	3.3	1.5

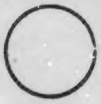


Lynn cut the roll of clay with a knife as shown in this picture. What will one of the pieces look like? Fill in the oval beside the one you choose.

○ 

● 

○ 

○ 

○ I don't know.

Release #: RC00642

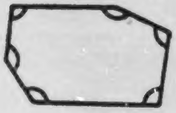
NAEP #: 5-C00642-919-23

1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 41. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap: 1977-78 Package-Exercise:	13 02-15	17 11-35
Timing: (in seconds) Exercise Total Time	45	35

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	RC	FABC	RCTY	SMPL
AGE 13	P	6.5	7.2	8.8	4.7	5.6	8.3*	4.5*	7.5	8.1	7.5	4.8*
	SE	0.7	1.4	1.6	1.1	1.4	1.0	0.9	1.3	1.8	2.3	0.8
GRD 8	P	6.1	6.8	7.9	4.3	5.8	8.6*	3.8*	7.8	8.0	8.0	3.7*
	SE	0.8	1.2	1.7	1.5	1.6	1.2	1.0	1.5	1.8	3.0	0.7
AGE 17	P	12.8	9.9	13.0	15.2	12.2	16.1*	9.7*	14.2	14.0	16.9	10.8
	SE	1.2	1.5	2.6	2.2	2.9	1.3	1.4	2.8	3.2	3.5	1.6
GRD 11	P	13.4	10.8	12.3	16.5	12.3	17.0*	10.2*	15.6	14.7	16.2	11.0
	SE	1.5	2.2	3.0	2.8	3.3	1.7	1.7	3.2	3.6	4.0	2.0



What is the sum of the interior angles of this plane figure?

○ 540°

● 720°

○ 900°

○ 1080°

○ Not enough information given

○ I don't know.

Release #: BC80843

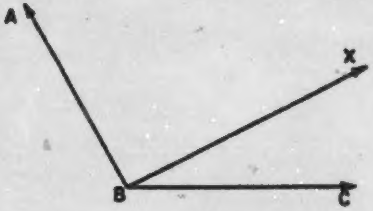
NAEP #: S-C80843-919-23

1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 4B. Non-routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

	13	17
Overlap: 1977-78 Package-Exercise:	10-13	02-26
Timing: (in seconds) Exercise Total Time	40	30

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 13	P	23.6	23.5	26.0	20.4	25.3	21.4*	25.7*	25.6	25.7	22.9	21.8
	SE	1.1	2.3	2.2	2.4	1.7	1.8	1.4	2.2	1.9	4.1	2.0
GRD 8	P	25.5	25.6	26.9	21.9	27.5	22.4	28.1	28.6	26.4	25.6	23.5
	SE	1.2	3.5	1.8	2.5	1.9	2.0	1.8	2.6	2.1	4.8	2.3
AGE 17	P	40.7	35.6	37.0*	42.6	46.9*	43.9*	37.7*	35.9	50.1*	44.5	36.1*
	SE	1.4	3.1	1.4	3.3	2.7	2.1	1.8	3.0	2.6	3.3	2.4
GRD 11	P	43.7	37.5*	38.8	46.1	51.0*	49.2*	38.7*	39.0	53.9*	51.5	37.6*
	SE	1.5	1.7	2.4	3.5	2.5	2.2	1.9	3.7	2.9	4.3	2.5



$\angle ABC$ is obtuse. $\angle XBC$ is 40°. What is the measure of $\angle ABX$?

○ 40°
○ 50°
○ 90°
○ 140°
● Not enough information given

○ I don't know.

Release #: NC81342

NAEP #: 5-C81042-919-23

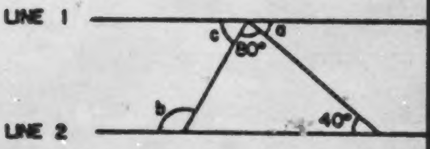
1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap:
1977-78 Package-Exercise: $\frac{13}{02-34}$ $\frac{17}{04-33}$

Timing: (in seconds)
Exercise Total Time 56 52

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 13	P	34.0	34.5	33.9	33.7	33.9	38.4*	29.3*	28.4*	33.1	39.7	36.3
	SE	1.5	3.1	3.4	2.4	3.2	1.9	1.9	2.4	3.4	5.0	2.0
GRD 8	P	34.9	36.7	36.0	33.2	34.3	40.4*	29.7*	30.6	33.6	41.1	36.7
	SE	1.6	3.3	3.3	2.4	3.2	1.7	2.2	2.3	3.7	7.6	2.0
AGE 17	P	55.0	48.1*	55.9	55.8	57.8	60.4*	50.3*	52.9	59.1	64.1	52.0
	SE	1.3	1.7	2.5	2.7	2.9	2.0	1.8	3.0	2.8	6.7	1.6
GRD 11	P	55.5	48.3*	56.4	56.9	58.7	62.9*	49.3*	53.6	57.3	60.1	54.1
	SE	1.5	2.3	2.8	2.7	3.4	2.5	1.9	2.9	3.3	8.8	2.0
PART B												
AGE 13	P	17.6	13.8*	19.9	19.5	16.8	20.4*	14.7*	15.4	19.7	22.1	16.8
	SE	0.9	2.1	1.7	2.1	1.3	1.3	1.1	1.9	2.0	5.4	1.3
GRD 8	P	19.7	14.0*	22.2	24.0	18.1	23.2*	16.4*	18.8	22.1	21.4	18.5
	SE	1.1	1.9	1.6	2.9	1.8	1.7	1.4	2.4	1.8	6.3	1.5
AGE 17	P	44.8	43.9	39.2*	48.3	49.0	51.0*	39.4*	44.1	49.9	54.6	41.1*
	SE	1.5	1.8	2.1	3.0	3.8	2.3	1.6	3.4	3.0	6.2	2.4
GRD 11	P	46.8	48.9	40.0*	49.7	47.8	53.6*	41.0*	45.9	50.0	59.4*	43.9
	SE	1.5	1.9	2.5	2.9	3.8	2.7	1.8	3.8	3.0	6.3	2.5



In the figure above, line 1 is parallel to line 2.

A. What is the measure of ∠a?

● 40°
○ 60°
○ 80°
○ It is equal to the measure of ∠c
○ Not enough information given

○ I don't know.

B. What is the measure of ∠b?

○ 40°
○ 60°
● 120°
○ 140°
○ Not enough information given

○ I don't know.

Release #: RC01303

NAEP #: 5-C01303-919-3

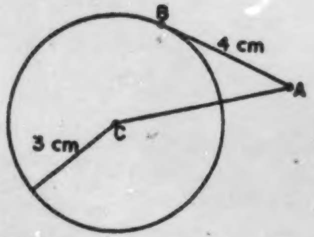
1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 4B. Non-routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap:
1977-78 Package-Exercise: 17 / 07-37

Timing: (in seconds)
Exercise Total Time 48

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17	P	48.7	38.3*	50.2	52.9*	50.6	54.1*	43.6*	45.2	56.5*	54.0	45.4*
	SE	1.4	3.4	3.4	2.4	2.4	1.8	1.9	2.9	3.0	9.6	1.7
GRD 11	P	53.5	40.2*	53.8	53.9	51.6	57.0*	48.8*	46.9	58.5*	51.4	47.8
	SE	1.5	4.6	2.7	2.3	2.6	1.9	2.1	3.3	2.9	11.6	1.6



The tangent segment $\overline{AB}$ is 4 cm long. If the radius of the circle is 3 cm, how far is point A from the center of the circle?

○ 3 cm
○ 4 cm
● 5 cm
○ 6 cm
○ 7 cm

○ I don't know.

Release #: RC90432

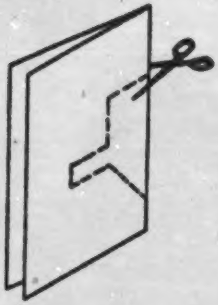
SARP #: 5-C90432-919-123

1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 3B. Understanding

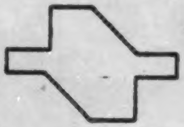
Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

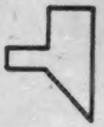
Overlap: 1977-78 Package-Exercise:	9 06-33	13 09-30	17 10-28
Timing: (in seconds) Exercise Total Time	32	23	29

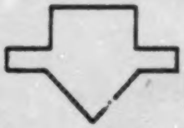
		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	60.3	52.8*	64.0	63.1	60.1	60.0	60.5	54.3*	65.8	59.2	60.8
	SE	1.4	2.8	2.3	2.5	3.3	1.7	1.8	2.6	3.2	4.2	2.2
GRD 4	P	63.3	54.6*	67.9	66.4	63.4	64.8	61.9	57.5*	69.6	62.4	62.8
	SE	1.8	3.3	4.0	3.7	3.5	2.1	2.3	2.5	3.6	5.0	2.8
AGE 13	P	80.0	73.9*	81.4	80.9	83.2	78.6	81.4	80.9	81.5	83.3	77.9
	SE	1.0	2.9	1.5	1.3	1.9	1.3	1.5	1.7	2.3	2.6	2.1
GRD 8	P	83.6	77.9*	83.5	84.4	87.2*	82.9	84.2	83.9	84.9	86.2	82.0
	SE	1.0	2.6	1.8	2.1	1.6	1.4	1.3	2.0	2.2	3.1	2.0
AGE 17	P	85.5	82.5*	88.7	86.8	84.7	85.5	86.2	84.1	85.5	90.9*	86.1
	SE	0.9	1.9	1.9	1.8	1.3	1.2	1.3	2.2	1.9	2.5	1.0
GRD 11	P	87.3	83.2	89.3	89.2	85.9	86.5	88.1	86.9	86.8	89.2	87.5
	SE	1.1	2.3	2.0	1.8	2.3	1.5	1.4	2.3	2.3	3.4	1.4

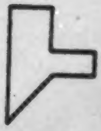


What will the figure above look like when it is cut out and unfolded? Fill in the oval beside the one you choose.

○ 

○ 

● 

○ 

○ **I don't know.**

Release #: NC98783

NAEP #: 5-C98783-919-2

1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 4B. Non-routine Problems

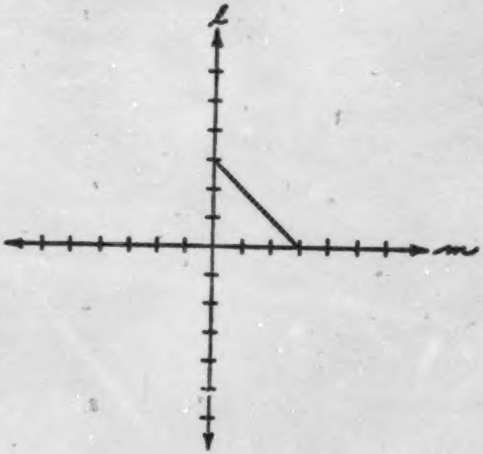
Exercise Type: Open Ended
Stimulus Type: Text/Tape/Graph

Overlap: 13
1977-78 Package-Exercise: 01-17

Timing: (in seconds)
Exercise Total Time 56

			REGION				SEX		COMMUNITY SIZE (DOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 13 P	20.7	18.2	18.3	23.4	22.4	22.8	18.5	20.5	24.5	21.2	18.4
SE	1.3	1.6	2.2	2.7	3.4	1.7	1.7	2.7	2.5	4.6	1.8
GRD 8 P	20.6	19.0	18.3	23.4	21.6	23.2	18.3	19.3	24.2	18.4	19.5
SE	1.7	3.2	3.6	2.8	3.8	2.0	2.1	3.0	3.2	4.9	2.6

Complete the drawing below so that line ℓ and line m are both lines of symmetry.



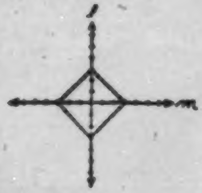
C90743-2

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

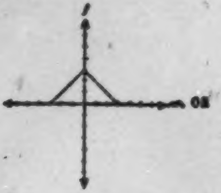
11 =



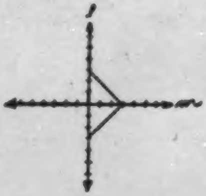
12 = MULTIPLE DIAMONDS WITH L AND M BOTH LINES OF SYMMETRY.

20 = OTHER

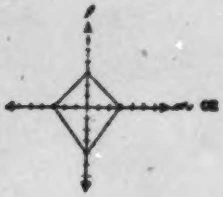
21 =



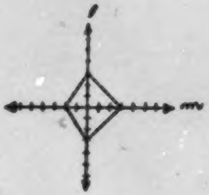
OR



22 = MADE A DIAMOND SHAPED DRAWING BUT WAS ONE POINT OFF FROM 3 ON L AND/OR M.



OR

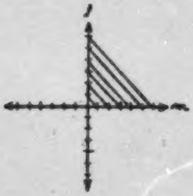


C90743
CONTINUED

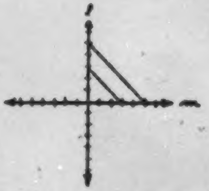
SCORING GUIDE

Categories are listed below.

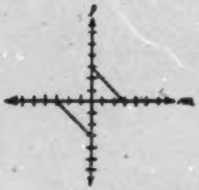
23 = DREW ONE OR MORE LINES PARALLEL TO THE GIVEN LINE IN THE FIRST QUADRANT.



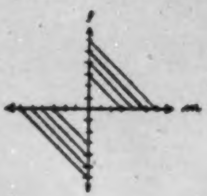
OR



24 = A SINGLE OR MULTIPLE LINES IN QUADRANTS THREE (AND ONE), ATTEMPTED TO DRAW FIGURE SYMMETRIC ABOUT THE ORIGIN.



OR



39 = I DON'T KNOW.

Release #: 0D11611

NAEP #: S-D11611-919-123

1977-78 Content Area: D. Measurement
1977-78 Objective: 1A. Recall and Recognition

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:	9	13	17
1977-78 Package-Exercise:	01-18	08-33	01-27
Timing: (in seconds)			
Exercise Total Time	23	18	18

Which unit would you use to measure the length of your thumb?

● centimeters

○ meters

○ kilometers

○ I don't know.

			REGION				SEX		COMMUNITY SIZE (DOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9 P	65.2	55.0*	56.2*	76.6*	70.2	67.1	63.2	57.3*	73.3*	73.3	63.6
SE	1.8	2.4	4.3	3.0	4.1	1.7	2.4	4.1	2.9	5.4	2.6
GRD 4 P	68.1	58.5*	59.2*	81.5*	70.7	71.4*	65.3	60.4	77.2*	74.3	66.4
SE	1.9	3.0	4.5	2.9	4.1	1.8	2.7	4.6	2.1	5.0	3.1
AGE 13 P	79.7	68.2*	83.1	82.7	86.7*	81.5	77.8	75.9	83.8	84.3	79.0
SE	1.5	2.7	2.7	2.8	3.6	1.6	1.9	2.9	2.9	4.8	2.1
GRD 8 P	84.5	74.8*	85.7	87.9	88.0	87.9*	81.4*	83.5	86.1	86.3	83.8
SE	1.6	4.4	2.6	2.2	3.6	1.7	2.1	2.6	3.1	4.9	2.4
AGE 17 P	88.2	85.8	88.5	90.0	87.7	90.2*	86.3*	85.1	91.5	90.8	88.1
SE	0.9	1.5	2.3	1.6	1.6	1.1	1.3	2.1	2.3	1.6	1.4
GRD 11 P	90.1	88.9	88.5	92.6	89.4	92.7*	87.9*	87.6	92.3	92.3	90.2
SE	1.1	1.8	2.9	1.5	2.0	1.3	1.6	2.3	2.3	1.3	1.7

Release #: RD20522

NAEP #: 5-D20522-919-23

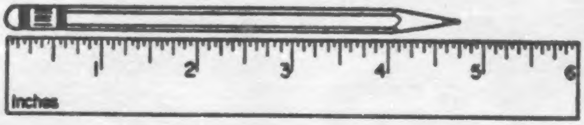
1977-78 Content Area: D. Measurement
1977-78 Objective: 2B. Making Measurements

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture

Overlap:
1977-78 Package-Exercise: 13/01-04 17/06-02

Timing: (in seconds)
Exercise Total Time 19 16

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 13	P	53.2	37.6*	52.3	62.0*	58.7*	58.8*	47.4*	45.7*	65.7*	58.3	49.2
	SE	1.7	4.2	2.8	4.1	2.4	2.1	2.0	4.3	2.3	6.9	2.2
GRD 8	P	60.6	45.5*	57.1	72.9*	64.3	68.8*	53.1*	52.9*	70.3*	68.6	56.5
	SE	1.7	4.4	3.3	3.3	2.9	2.3	2.0	4.4	2.1	5.2	2.7
AGE 17	P	80.9	66.6*	79.5	89.6*	82.7	84.3*	77.7*	70.6*	87.1*	82.2	82.1
	SE	1.5	2.6	3.6	2.3	2.2	1.5	2.1	4.5	2.1	4.2	1.6
GRD 11	P	84.8	72.7*	84.0	91.7*	85.6	89.6*	80.6*	76.8*	88.5	84.2	86.2
	SE	1.5	3.5	3.3	2.1	2.0	1.7	2.2	4.4	2.4	3.5	1.8



What is the length of this pencil to the nearest quarter inch?

ANSWER ______________ inches

D20522-23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 4 3/4 OR 4.75 WITH OR WITHOUT INCHES

12 = 4 12/16, 4 6/8 OR OTHER NUMBERS EQUIVALENT TO 4 3/4

20 = OTHER

21 = 5 OR EQUIVALENT

22 = 4 AND SOME FRACTION OR DECIMAL OTHER THAN CATEGORY 11 OR 12

23 = 1/4 OR EQUIVALENT

24 = 4

39 = I DON'T KNOW.

Release #: RD23922

NAEP #: S-D20922-919-12

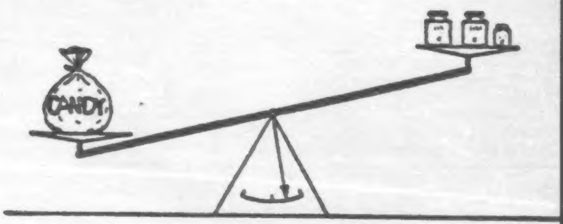
1977-78 Content Area: D. Measurement
1977-78 Objective: 2B. Making Measurements

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap:
1977-78 Package-Exercise: 9/01-28 13/01-10

Timing: (in seconds)
Exercise Total Time 37 31

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	53.8	51.1	50.1	55.3	58.6	58.5*	49.2*	50.5	55.8	53.1	54.6
	SE	1.1	1.9	2.3	1.9	2.8	2.2	1.6	2.8	2.4	4.0	1.7
GRD 4	P	56.8	51.3*	53.7	59.5	61.7*	62.9*	51.4*	52.1	61.7*	58.2	56.5
	SE	1.2	1.9	2.8	2.8	2.3	2.5	2.0	3.6	2.0	4.1	2.8
AGE 13	P	73.6	66.3*	73.6	77.6*	75.7	76.5*	70.5*	70.4	79.4*	79.1	70.8
	SE	1.3	2.6	3.3	1.9	3.0	1.5	1.7	2.2	1.9	3.2	2.7
GRD 8	P	75.7	65.7*	74.3	81.6*	79.4	80.2*	71.5*	72.5	80.5*	81.7*	72.8
	SE	1.8	1.5	4.2	1.8	2.1	1.5	2.1	2.5	1.9	2.3	3.3



What is the weight of this bag of candy?

○ 225 g

● more than 225 g

○ less than 225 g

○ I don't know.

Release #: RD21322

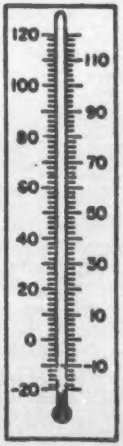
NAEP #: S-R21322-919-123

1977-78 Content Area: D. Measurement
1977-78 Objective: 2B. Making Measurements

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap:	9	13	17
1977-78 Package-Exercise:	02-22	03-08	08-06
Timing: (in seconds) Exercise Total Time	23	13	12

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	79.7	79.9	78.1	82.3	78.2	79.8	80.4	79.6	78.8	78.1	80.7
	SE	1.0	2.7	2.1	1.5	1.6	1.5	1.3	1.9	2.1	8.7	1.1
GRD 4	P	80.8	81.5	76.3*	84.8	80.5	81.0	80.6	80.6	78.9	83.9	82.3
	SE	1.1	2.9	2.2	2.0	1.5	1.7	1.5	2.3	2.0	4.6	1.2
AGE 13	P	88.9	86.6	90.0	90.4	88.4	87.5	90.4	87.8	88.5	88.3	89.9
	SE	0.8	1.6	1.3	1.4	1.9	1.1	1.1	1.7	1.9	3.1	0.8
GRD 8	P	91.0	88.5	94.4*	92.0	89.4	91.0	91.1	90.5	91.4	88.3	91.7
	SE	0.8	1.7	1.0	1.2	1.5	1.1	1.1	2.3	1.6	2.4	0.9
AGE 17	P	94.0	93.5	92.0	94.8	95.3	93.6	94.3	92.3	93.4	97.7*	94.6
	SE	1.0	1.0	1.2	2.4	2.0	1.5	0.9	2.8	2.1	1.3	0.7
GRD 11	P	95.5	96.0	93.5	96.5	95.9	95.8	95.3	95.2	93.2	99.0*	96.4
	SE	0.9	0.9	1.2	1.3	2.9	1.6	0.7	1.5	2.6	0.7	0.6



What temperature is shown on this thermometer?

● -10°

○ - 5°

○ 5°

○ 10°

○ I don't know.

Release #: BD21522

NAEP #: S-D21522-919-12

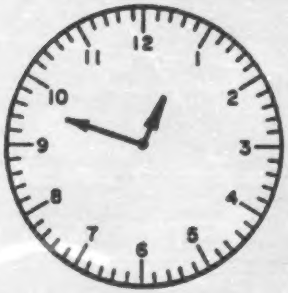
1977-78 Content Area: D. Measurement
1977-78 Objective: 2B. Making Measurements

Exercise Type: Multiple Choice
Stimulus Type: Text Tape/Picture

Overlap:
1977-78 Package-Exercise: $\frac{9}{04\text{-}12}$ $\frac{13}{04\text{-}02}$

Timing: (in seconds)
Exercise Total Time 22 14

			REGION				SEX		COMMUNITY SIZE (DOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 9	P	58.8	49.1*	60.5	62.2	62.5	62.1*	55.4*	56.7	69.1*	56.8	55.5
	SE	1.6	4.5	3.0	2.5	2.6	2.1	1.9	2.9	2.4	7.4	2.2
GRD 4	P	63.6	55.0*	67.5	65.5	66.0	67.5*	59.9*	58.1*	74.4*	61.6	61.1
	SE	1.7	4.1	3.4	3.4	2.5	2.1	2.2	2.9	2.9	5.0	2.4
AGE 13	P	84.7	75.3*	88.5*	87.1	86.4	84.1	85.2	85.9	90.0*	87.5	81.0*
	SE	1.0	2.7	1.2	1.7	1.8	1.4	1.4	1.9	1.4	1.9	1.7
GRD 8	P	88.3	82.0*	90.3	90.9	89.1	88.2	88.4	90.0	91.8	89.9	85.2*
	SE	1.2	3.6	1.6	1.5	2.1	1.7	1.3	2.1	1.7	2.1	2.0



What time is shown on the clock?

○ 12:43
● 12:48
○ 12:50
○ 12:52

○ I don't know.

Release #: RB30222

NAEP #: 5-B30222-919-12

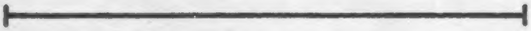
1977-78 Content Area: D. Measurement
1977-78 Objective: 2B. Making Measurements

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Tool for measuring

Overlap: 9 13
1977-78 Package-Exercise: 03-37 10-33

Timing: (in seconds)
Exercise Total Time 30 30

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	62.1	58.4	55.9	69.6*	62.6	66.1*	58.1*	58.9	59.1	67.7	64.0
	SE	1.7	2.8	3.6	2.9	4.5	2.2	1.9	2.9	5.3	2.8	2.8
GRD 4	P	63.0	58.0	55.5	72.7*	64.0	66.7*	59.6*	59.7	59.3	69.3	65.2
	SE	1.9	2.8	4.9	2.4	4.4	2.1	2.3	3.9	5.4	3.7	3.3
AGE 13	P	54.2	54.2	52.0	62.1*	46.9*	57.0	51.6	47.3	49.8	56.7	59.2*
	SE	1.4	3.5	2.8	2.3	4.2	1.8	2.1	4.2	3.4	4.6	1.9
GRD 8	P	57.6	60.9	52.1	69.0*	49.5*	61.8*	54.2*	54.2	50.7*	62.5	62.8
	SE	1.5	3.1	3.4	2.7	2.3	2.2	2.0	4.2	3.7	4.8	2.4



Use the ruler to find the length of this line segment to the nearest centimeter.

ANSWER ______________ centimeters

B30222-12

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 14, 14 CM OR "NEAR TO 14"

20 = OTHER

21 = 14.6 TO 14.9

22 = 13.0 TO 13.6

23 = 136 TO 140

24 = 13.7 TO 13.8 INCLUDING 13.7 AND 13.8

25 = 13.6 TO 13.7, 13.8 TO 13.9, 13CM OR 4MM, EXCEPT CATEGORY 24

39 = I DON'T KNOW.

Release #: RD03222

NAEP #: 5-D40222-919-12

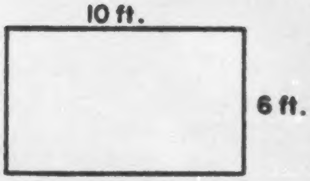
1977-78 Content Area: D. Measurement
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap:
1977-78 Package-Exercise: $\frac{9}{02-05}$ $\frac{13}{10-19}$

Timing: (in seconds)
Exercise Total Time 33 23

				REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	8.3	6.4	7.1	9.8	9.6	8.2	8.4	3.7*	9.7	13.3	8.6
	SE	1.3	1.8	2.1	2.1	1.7	1.3	1.1	1.0	2.0	3.1	1.5
GRD 4	P	9.1	6.7	7.7	11.4	10.4	9.1	9.2	4.0*	10.8	15.1	9.1
	SE	1.1	2.0	2.1	2.7	1.8	1.5	1.3	1.3	2.2	4.0	1.6
AGE 13	P	49.3	44.1	49.6	53.8*	48.0	54.1*	44.8*	43.4	55.9*	48.7	48.8
	SE	1.5	3.7	3.0	2.6	3.0	1.8	2.2	3.4	2.1	3.2	2.6
GRD 8	P	52.9	49.8	55.2	56.8	49.5	60.2*	46.0*	49.4	57.6*	50.6	52.3
	SE	1.7	3.8	3.0	2.9	3.7	2.1	2.4	3.2	1.9	3.8	3.3



What is the **PERIMETER** of this rectangle?

○ 16 feet
○ 30 feet
● 32 feet
○ 36 feet
○ 60 feet

○ I don't know.

Release #: RB03322

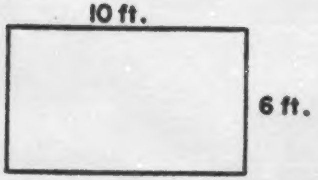
NAEP #: S-M40322-919-12

1977-78 Content Area: D. Measurement
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap:	9	13
1977-78 Package-Exercise:	01-07	09-15
Timing: (in seconds) Exercise Total Time	34	19

			REGION				SEX		COMMUNITY SIZE (SOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	39.8	29.7*	30.9*	47.7*	49.4*	41.3	38.4	29.2*	49.8*	43.5	39.6
	SE	1.9	2.6	3.3	4.2	5.0	1.9	2.5	2.9	3.2	6.9	3.2
GRD 4	P	46.2	33.1*	38.8	57.2*	53.1	48.9	43.8	35.5*	56.6*	52.8	45.2
	SE	2.2	2.6	4.0	4.4	5.6	2.3	2.7	2.9	3.4	9.9	3.7
AGE 13	P	69.2	68.8	67.1	74.9*	64.4	73.4*	64.7*	70.8	72.3	69.1	66.7
	SE	1.6	3.0	3.5	2.5	3.6	1.8	2.4	3.1	3.2	4.2	2.8
GRD 8	P	73.2	75.7	72.0	77.9*	67.4	77.5*	69.0*	76.9	73.8	71.1	71.0
	SE	1.7	2.6	4.1	2.1	4.2	2.2	2.4	3.0	3.3	5.8	2.9



What is the DISTANCE ALL THE WAY AROUND this rectangle?

- ○ 16 feet
- ○ 30 feet
- ● 32 feet
- ○ 36 feet
- ○ 60 feet

- ○ I don't know.

Release #: RD40922

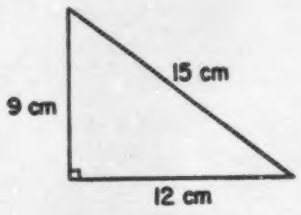
NAEP #: 5-D40922-919-23

1977-78 Content Area: D. Measurement
1977-78 Objective: 4A. Routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture

Overlap: 1977-78 Package-Exercise:	13 04-26	17 03-10
Timing: (in seconds) Exercise Total Time	23	23

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	FARC	UCTY	SMPL
AGE 13	P	3.7	3.5	2.3	3.0	6.4	3.6	3.7	6.6	2.2	7.5	2.2
	SE	0.7	2.0	0.8	0.7	2.2	0.6	1.0	2.0	0.9	5.1	0.7
GRD 8	P	4.8	3.8	3.4	4.3	7.5	5.1	4.4	8.9*	2.8	8.4	2.8
	SE	0.9	2.6	1.2	1.0	2.6	0.9	1.2	2.4	1.1	5.8	1.0
AGE 17	P	18.2	9.7*	12.6*	26.5*	20.1	21.0*	15.6*	20.4	21.8	28.2	14.3*
	SE	1.5	2.3	2.8	2.7	3.7	1.8	1.7	3.1	3.0	6.4	1.9
GRD 11	P	19.9	10.8*	13.2*	26.8*	24.3	23.7*	16.6*	22.6	22.9	30.5	15.8*
	SE	1.7	2.6	2.6	3.3	4.1	2.2	1.9	3.4	3.5	5.4	1.7



What is the area of this right triangle?

ANSWER ______________________ square cm

D40922-23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 54 SQ. CM OR 54

20 = OTHER

21 = 108 OR ATTEMPTED 9 X 12

22 = 36 OR ATTEMPTED (9 + 12 + 15)

23 = 135, 180 OR ATTEMPTED 9 X 15 OR 12 X 15

24 = 1620 OR ATTEMPTED (9 X 12 X 15)

25 = WROTE ONE OF THE DIMENSIONS 9, 12 OR 15

26 = ATTEMPTED (9 X 12) DIVIDED BY 2, WITH NO OR WRONG ANSWER

39 = I DON'T KNOW.

Release #: R050532

NAEP #: 5-050532-919-12

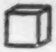
1977-78 Content Area: D. Measurement
1977-78 Objective: 3B. Understanding

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture

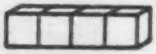
Overlap:
1977-78 Package-Exercise: 9 / 05-40   13 / 09-33

Timing: (in seconds)
Exercise Total Time 41 41

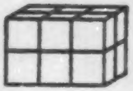
			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 9	P	75.6	69.5*	78.5	78.6	79.1	77.4	73.7	78.6	78.2	70.7	78.0
	SE	1.3	2.6	2.7	1.6	2.4	1.7	1.6	3.2	2.9	5.6	1.6
GRD 4	P	78.7	72.2*	77.3	81.3	82.7	80.6	76.9	80.2	83.0	73.6	76.6
	SE	1.3	2.2	3.4	2.3	2.2	1.7	1.9	2.4	3.3	6.2	1.6
AGE 13	P	77.8	79.8	72.2*	79.8	78.7	79.2	76.3	78.0	83.8	75.9	78.9
	SE	1.2	2.4	3.1	1.4	2.0	1.3	1.9	2.1	2.7	5.8	2.0
GRD 8	P	80.6	85.9*	73.2	83.1	79.8	83.9*	77.4*	77.1	82.2	77.7	82.6
	SE	1.7	1.6	4.3	1.8	3.8	1.9	2.1	3.1	3.2	8.2	2.0
PART B												
AGE 9	P	34.9	31.3	32.2	38.2	37.4	39.0*	29.9*	39.5	36.2	37.6	32.2
	SE	1.7	2.8	2.6	2.9	4.7	2.2	2.5	4.4	4.1	5.4	2.0
GRD 4	P	38.5	34.5	35.4	42.4	41.0	44.4*	33.0*	42.7	40.8	40.7	35.4
	SE	2.1	3.8	3.0	3.7	5.1	2.5	3.1	4.3	5.1	6.2	2.6
AGE 13	P	57.9	56.2	51.5*	63.3*	58.8	62.2*	53.4*	54.3	62.2	58.4	57.9
	SE	1.2	2.5	2.5	1.7	3.3	1.5	1.7	2.9	4.8	5.1	1.9
GRD 8	P	62.3	62.1	56.3	68.4*	61.0	66.3*	58.5*	58.6	65.6	59.7	63.4
	SE	1.8	2.7	4.7	2.1	4.1	2.2	2.2	4.1	5.1	5.1	2.2

This is one unit: 

What is the volume of each rectangular solid below?

A. 

ANSWER ________

B. 

ANSWER ________

D50532-12
PARTS A&B

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 4 OR FOUR

20 = OTHER

21 = 9

22 = 18

23 = 8

24 = 16

25 = 1

26 = 5

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 12

20 = OTHER

21 = 16

22 = 32

23 = 6

24 = 24

25 = 10

39 = I DON'T KNOW.

Release #: RD60232

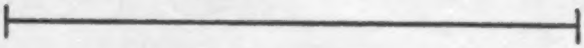
NAEP #: 5-D60232-919-123

1977-78 Content Area: D. Measurement
1977-78 Objective: 2B. Making Measurements

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Tool for measuring

Overlap: 1977-78 Package-Exercise:	9 04-30	13 10-32	17 09-35
Timing: (in seconds) Exercise Total Time	51	46	27

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	64.7	58.5	57.6*	75.3*	68.4	64.4	65.0	55.5*	71.7*	60.9	66.6
	SE	1.6	4.5	3.4	1.5	2.8	2.0	1.8	4.0	2.6	4.2	1.7
GRD 4	P	69.5	65.0	61.5*	79.7*	70.1	70.7	68.5	58.5*	75.6*	69.2	71.5
	SE	1.5	3.6	3.5	1.8	2.6	1.7	1.9	4.3	2.9	2.8	1.8
AGE 13	P	84.8	83.7	84.0	88.4*	[illegible]	85.1	84.5	77.6*	86.1	85.3	87.3*
	SE	1.1	2.9	1.7	1.5	2.9	1.6	1.2	2.7	1.8	3.8	1.3
GRD 8	P	87.2	84.5	85.5	91.5*	86.7	87.5	87.1	83.4	86.6	88.8	89.0
	SE	1.1	2.5	1.8	1.7	2.7	1.8	1.1	2.6	1.9	2.5	1.4
AGE 17	P	89.1	87.0	85.2*	92.1*	90.5	90.2	88.0	84.8*	89.1	92.7	90.5
	SE	0.9	2.2	2.2	1.3	1.2	1.2	1.2	2.2	1.7	2.5	1.8
GRD 11	P	90.2	88.3	86.0	92.2	92.9	90.7	89.8	85.6	89.9	94.6*	91.7
	SE	1.0	2.3	2.7	1.7	1.2	1.4	1.3	3.0	2.0	2.0	1.4



How many paper clips long is this line segment? Use the paper clip you have been given.

ANSWER________________ paper clips

D60232-123

SCORING GUIDE

Categories are listed below.

NOTE: THE PAPER CLIP USED WAS SUCH THAT THE LINE WAS 5 TIMES THE CLIP LENGTH AND ABOUT 20 TIMES THE CLIP WIDTH.

00 = NO RESPONSE

11 = 5, FIVE OR 5 PAPER CLIPS

12 = 4 1/2 TO 5 1/2 WITH OR WITHOUT UNITS EXCEPT CATEGORY 11

13 = 19.0 TO 21.0 WITH OR WITHOUT UNITS

20 = OTHER

21 = 4 TO 4 1/2 EXCEPT CATEGORY 12

22 = ANY NUMBER LESS THAN 4

23 = MORE THAN 5 1/2 AND LESS THAN 10

29 = I DON'T KNOW.

Release #: RB92842

NAEP #: 5-D90842-919-12

1977-78 Content Area: D. Measurement
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	9 05-25	13 02-13
Timing: (in seconds) Exercise Total Time	67	32

Mr. Jones put a wire fence all the way around his rectangular garden. The garden is ten feet long and six feet wide. How many feet of fencing did he use?

- ○ 16 feet
- ○ 30 feet
- ● 32 feet
- ○ 36 feet
- ○ 60 feet

- ○ I don't know.

				REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	FABC	HCTY	SMPL
AGE 9	P	9.1	8.8	9.4	9.8	8.2	10.0	8.0	7.0	10.4	9.8	9.0
	SE	0.8	1.5	2.0	1.8	1.4	1.3	0.8	1.2	1.2	2.1	1.4
GRD 4	P	13.1	10.2	10.3	11.7	8.3	11.8	8.4	7.1*	11.2	11.9	10.3
	SE	0.9	1.7	2.4	2.1	1.2	1.6	0.9	1.3	1.4	3.0	1.6
AGE 13	P	31.3	23.1*	28.8	37.8*	33.8	36.4*	25.6*	26.0	36.8*	26.4	32.1
	SE	1.7	2.3	3.3	3.4	3.6	2.1	1.8	4.6	3.3	5.9	1.8
GRD 8	P	34.6	27.1*	31.8	41.6*	36.3	41.2*	28.3*	31.4	38.3	33.8	34.8
	SE	1.8	2.8	3.0	3.7	3.5	2.4	2.0	4.6	3.7	5.4	2.0

Release #: RD91041

NAEP #: 5-D91041-919-3

1977-78 Content Area: D. Measurement
1977-78 Objective: 4A. Routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 02-36

Timing: (in seconds)
Exercise Total Time 39

The floor of a rectangular room has an area of 96 square feet. Its width is 8 feet. How long is the room?

ANSWER ____________ ft.

			REGION				SEX		COMMUNITY SIZE (SOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	FRNC	HCTY	SMPL
AGE 17	P	59.4	54.8	52.5*	64.0	64.7	63.6*	55.3*	48.1*	65.0	70.0*	58.7
	SE	1.8	3.0	2.7	4.0	3.4	2.1	2.1	4.2	4.4	3.9	2.1
GRD 11	P	62.5	56.8	58.9*	66.3	70.3*	68.1*	57.5*	49.9*	69.0	72.5*	61.9
	SE	2.0	3.3	3.4	4.3	3.5	2.4	2.5	4.7	4.7	4.1	2.5

D91041-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 12 OR 12 BY 8

20 = OTHER

21 = ATTEMPTED 96 DIVIDED BY 8 WITH NO OR WRONG ANSWER

22 = 96

23 = 104 OR ATTEMPTED 96 + 8

24 = 88 OR ATTEMPTED 96 - 8

25 = 768, 96 BY 8 OR ATTEMPTED 96 X 8

26 = 16, 8 BY 16 OR ATTEMPTED 8 X 2

27 = 8

39 = I DON'T KNOW.

Release #: RD91741

NAEP #: S-D91741-919-123

1977-78 Content Area: D. Measurement
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	9 05-17	13 04-08	17 04-11
Timing: (in seconds) Exercise Total Time	29	19	18

How many centimeters are 5 meters 34 centimeters?

○ 39

○ 84

● 534

○ 50034

○ *I don't know.*

		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
			REGION				SEX		COMMUNITY SIZE (SOC)			
AGE 9	P	28.0	24.7	27.0	31.6	28.0	30.1	25.8	26.7	26.6	34.8	28.0
	SE	1.3	2.5	2.8	2.4	2.3	1.9	1.6	3.5	2.0	4.1	1.8
GRD 4	P	30.0	26.7	28.0	35.6*	29.0	32.9	27.2	28.6	28.1	33.7	30.8
	SE	1.4	3.3	3.1	2.8	2.4	2.3	1.9	4.2	2.1	5.5	2.2
AGE 13	P	40.3	34.1	36.7	47.5*	41.5	47.6*	32.8*	45.6	39.9	38.9	37.9
	SE	2.1	3.6	4.9	3.4	4.6	2.5	2.4	3.8	4.2	4.7	3.0
GRD 8	P	42.4	37.1	37.7	51.5*	42.1	51.4*	33.9*	48.4	39.3	44.4	40.2
	SE	2.3	3.2	5.0	3.9	5.6	3.0	2.7	4.1	5.3	6.1	3.2
AGE 17	P	51.6	49.4	44.7*	53.4	57.9*	61.3*	43.1*	52.1	52.7	55.3	50.3
	SE	1.4	3.0	2.2	2.6	2.9	2.1	1.7	3.0	3.5	7.2	1.6
GRD 11	P	53.0	52.1	46.4*	54.2	58.6*	64.5*	43.4*	53.3	52.9	61.8	51.9
	SE	1.4	3.2	2.6	2.4	3.0	2.2	1.9	3.4	2.9	7.0	2.0

Release #: B891942

NAEP #: S-B91942-919-2

1977-78 Content Area: B. Measurement
1977-78 Objective: 4A. Routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 13
1977-78 Package-Exercise: 05-03

Timing: (in seconds)
Exercise Total Time 27

Mr. Hernandez needs a ribbon 6 feet 5 inches long. How many inches of ribbon does he need?

ANSWER ________________

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 13	P	47.2	33.3*	47.3	50.7	55.6*	50.9*	43.5*	43.5	57.6*	56.6	42.7
	SE	1.9	3.6	3.5	2.8	4.7	2.5	2.2	4.6	3.6	11.2	2.7
GRD 8	P	54.4	42.4*	53.3	57.5	61.8	60.7*	48.9*	49.4	63.2*	64.8	50.2
	SE	2.1	4.3	3.6	3.3	5.1	3.1	2.1	4.7	3.2	13.3	2.7

B91942-2

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 77 INCHES OR 77

20 = OTHER

21 = 30 OR ATTEMPTED 6 X 5

22 = 65

23 = 11 OR ATTEMPTED 6 + 5

24 = 6 FEET 5 INCHES

25 = 5

26 = ATTEMPTED (12 X 6) + 5 WITH NO OR WRONG ANSWER

39 = I DON'T KNOW.

Release #: R092442

NAEP #: 5-092442-919-3

1977-78 Content Area: D. Measurement
1977-78 Objective: 41. Routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 06-25

Timing: (in seconds)
Exercise Total Time 56

A roast is to be cooked 20 minutes for each pound. If a roast weighing 11 pounds is to be done at 6:00 p.m., what time should it be put in the oven to cook?

ANSWER ________________

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FARC	HCTY	SMPL
AGE 17	P	24.9	20.3*	23.4	25.6	29.4	27.3*	22.6*	20.5	27.2	41.3*	24.0
	SE	1.3	2.4	2.1	2.1	3.9	1.8	1.5	2.9	2.4	5.1	1.5
GRD 11	P	25.5	22.7	23.3	25.8	29.6	28.6*	22.9*	21.8	26.6	44.2*	24.5
	SE	1.6	3.0	2.7	2.1	4.5	2.0	1.6	3.3	2.4	6.6	1.6

092442-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE
11 = 2:20 P.M.
12 = 2:20, 2.20 OR 2-20
20 = OTHER
21 = 3 HOURS 40 MINUTES OR 3:40
22 = 2:00 OR 2 P.M.
23 = 2:30 OR 2:30 P.M.
24 = BETWEEN 2:00 AND 2:30 BUT NOT CATEGORIES 22 OR 23
25 = 4:40
26 = 4:20
27 = 220 OR 2 HRS. 20 MIN.
28 = ATTEMPTED 6:00 - 3:40 WITH NO OR WRONG ANSWER
39 = I DON'T KNOW.

Release #: D93742

NAEP #: S-D93742-919-3

1977-78 Content Area: D. Measurement
1977-78 Objective: 4A. Routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 07-14

Timing: (in seconds)
Exercise Total Time 87

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17	P	13.2	9.8*	9.9*	16.1*	15.8*	19.7*	7.0*	13.7	15.8	17.4	11.0*
	SE	0.7	1.1	1.2	1.4	1.2	1.1	0.7	1.5	1.5	2.4	1.1
GRD 11	P	13.4	11.0*	9.1*	16.9*	15.1	20.9*	6.8*	14.8	16.3	14.6	11.1*
	SE	0.9	1.0	1.8	1.7	1.5	1.5	0.8	1.8	1.9	1.1	1.4

What is the price of a 12-foot by 15-foot piece of carpeting that sells for $7.00 per square yard?

ANSWER ______________

D93742-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = $140 OR 140.00

20 = OTHER

21 = 1260 WITH OR WITHOUT $ SIGNS OR OTHER DECIMAL PLACEMENT OR ATTEMPTED 12 X 15 X 7

22 = 420 WITH OR WITHOUT $ SIGNS OR OTHER DECIMAL PLACEMENT OR ATTEMPTED (12 X 15 X 7) DIVIDED BY 3

23 = 34, 27, 20 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED 12 + 15 + 7, 12 + 15 OR (12 + 15) - 7

24 = 63 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED (4 + 5) X 7

25 = 378, 11340 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED 12 X 15 X 3 X 7 OR 12 X 15 X 3 X 3 X 7

26 = 1.40 OR OTHER DECIMAL PLACEMENT EXCEPT CATEGORY 11

27 = ATTEMPTED (4 X 5) X 7 OR (12 X 15 X 7) DIVIDED BY 9 WITH NO OR WRONG ANSWER

39 = I DON'T KNOW.

Release #: D94043

NAEP #: 5-D94043-910-3

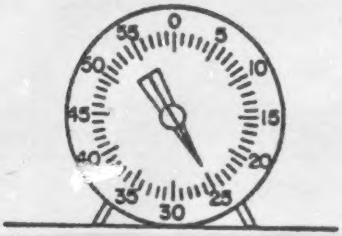
1977-78 Content Area: D. Measurement
1977-78 Objective: 4B. Non-routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture

Overlap:
1977-78 Package-Exercise: 17 / 01-08

Timing: (in seconds)
Exercise Total Time 53

			REGION				SEX		COMMUNITY SIZE (DOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17 P	61.9	54.0*	65.2	66.9*	58.3	63.7	60.2	58.2	66.7	63.8	61.7
SE	1.6	3.8	3.0	2.6	3.1	2.1	1.8	3.5	3.7	2.6	2.0
GRD 11 P	64.2	57.1*	68.0	67.0	61.5	65.8	62.9	59.4	67.8	69.8	64.4
SE	1.6	3.8	2.7	2.3	4.3	2.3	1.9	3.5	3.5	3.4	2.1



Betty set the timer to run for 40 minutes. It had run for 15 minutes when she discovered it should have been set to run for 50 minutes. Where should she reset the timer now to correct the mistake?

ANSWER ____________________

D94043-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE
11 = 35 OR 35 MINUTES
20 = OTHER
21 = 5 OR 5 MINUTES
22 = 10 OR 10 MINUTES
23 = 15 OR 15 MINUTES
24 = 20 OR 20 MINUTES
25 = 25 OR 25 MINUTES
26 = 30 OR 30 MINUTES
27 = 40 OR 40 MINUTES
28 = 45 OR 45 MINUTES
29 = 55 OR 55 MINUTES
39 = I DON'T KNOW.

Release #: 0094143

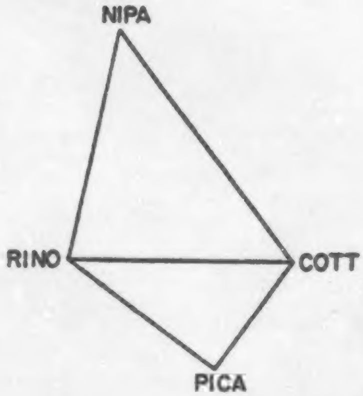
NAEP #: S-094143-919-23

1977-78 Content Area: D. Measurement
1977-78 Objective: 4B. Non-routine Problems

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Tool for measuring

Overlap:
1977-78 Package-Exercise: $\frac{13}{10\text{-}36}$ $\frac{17}{11\text{-}23}$

Timing: (in seconds)
Exercise Total Time 72 68



The distance from Rino to Cott is 24 kilometers. Use this information together with the scale drawing and the ruler to find the distance from Rino to Pica.

ANSWER________________ kilometers

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 13	P	43.0	32.7*	42.1	51.4*	42.8	45.9*	40.3*	38.1	49.3	41.7	42.4
	SE	1.6	2.6	3.5	2.6	3.4	2.1	1.6	3.9	3.7	4.1	2.4
GRD 8	P	48.7	38.8*	47.6	58.7*	47.3	54.2*	44.2*	44.1	53.4	48.9	48.0
	SE	1.7	3.6	3.6	3.1	3.2	2.5	1.8	4.3	3.4	5.3	2.5
AGE 17	P	65.3	60.9	60.2	71.8*	65.7	68.0	62.6	58.7*	69.3	75.4	64.5
	SE	1.7	3.5	3.8	2.3	4.2	2.4	2.1	3.0	3.0	5.6	2.9
GRD 11	P	69.6	67.0	64.0	75.9*	68.4	74.0*	65.7*	64.9	72.7	78.0	68.6
	SE	1.7	4.4	3.8	1.8	3.8	2.2	2.1	3.0	1.8	5.1	2.9

094143-23

SCORING GUIDE

Categories are listed below.

NOTE: UNITS ATTACHED TO ANSWERS ARE TO BE DISREGARDED ON THIS EXERCISE.

00 = NO RESPONSE

11 = 20

12 = 18 TO 22, EXCEPT CATEGORY 11

20 = OTHER

21 = 4.7 TO 5.3

22 = 5.7 TO 6.3 OR 24

23 = 23

39 = I DON'T KNOW.

Release #: R004845

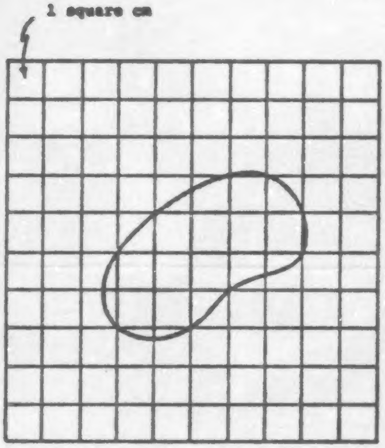
NAEP #: S-004845-919-23

1977-78 Content Area: D. Measurement
1977-78 Objective: 2F. Estimating Computations and Measurements

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

Overlap: 13 17
1977-78 Package-Exercise: 08-38 06-26

Timing: (in seconds)
Exercise Total Time 34 22



ESTIMATE the area of the SHADED region above.

○ 10 square cm

● 16 square cm

○ 20 square cm

○ 23 square cm

○ I don't know.

			REGION				SEX		COMMUNITY SIZE (TOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 13	P	63.2	52.4*	63.9	67.9*	67.8*	65.1	61.4	57.4*	70.5*	73.5*	61.6
	SE	1.4	4.2	2.1	2.8	1.9	1.4	2.0	2.4	3.4	2.7	2.4
GRD 8	P	69.0	59.0*	70.8	74.4	70.2	71.4	66.9	63.3*	73.5	75.9*	68.2
	SE	1.6	5.5	2.3	3.4	1.8	1.9	2.4	2.2	3.1	3.5	2.9
AGE 17	P	76.4	65.2*	76.5	82.2*	78.0	79.6*	73.3*	71.3*	82.7*	78.8	74.9
	SE	1.6	2.7	3.9	2.7	2.5	2.0	1.7	3.2	2.9	5.2	2.0
GRD 11	P	79.4	69.8*	79.9	84.7*	79.1	84.9*	74.6*	75.5	84.3*	77.0	78.4
	SE	1.7	3.2	3.6	2.8	2.8	2.1	2.0	3.2	2.6	6.6	2.4

Release #: EE10101

NAEP #: S-E10101-919-12

1977-78 Content Area: E. Other Topics
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

		9	13
Overlap: 1977-78 Package-Exercise:		02-09	01-27
Timing: (in seconds) Exercise Total Time		65	36

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 9	P	13.4	12.6	9.6	15.7	15.1	9.8*	17.2*	11.7	15.6	17.3	12.1
	SE	1.4	2.9	1.7	3.2	3.2	1.2	1.9	2.7	3.0	5.3	1.5
GRD 4	P	15.3	13.8	10.8	19.1	17.1	11.7*	18.6*	11.7	17.1	20.9	18.6
	SE	1.7	3.7	2.2	3.8	3.9	1.5	2.2	3.0	3.7	6.6	1.0
AGE 13	P	68.0	57.7*	66.9	72.1	74.4*	64.0*	72.2*	62.0*	78.8*	75.9*	63.5*
	SE	1.6	3.2	2.9	3.4	2.9	2.1	2.0	3.8	1.5	4.0	2.2
GRD 8	P	73.0	66.3*	70.5	75.8	78.3*	70.2	7 .5	67.2	79.6*	81.0*	70.1
	SE	1.6	3.5	3.6	3.6	1.8	2.0	2.1	4.3	1.8	2.9	2.3

Dale had dark slacks and white slacks.

Dale also had 3 different shirts. They were plaid, plain, and striped. How many different outfits (slacks and shirt) could Dale wear?

○ 2

○ 3

○ 5

● 6

○ I don't know.

Release #: RE11146

NAEP #: 5-E11146-919-123

1977-78 Content Area: E. Other Topics
1977-78 Objective: 4D. Reasoning and Making Judgments

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:	9	13	17
1977-78 Package-Exercise:	04-22	09-22	03-28
Timing: (in seconds)			
Exercise Total Time	63	49	49

In a bag, there are 8 red marbles, 7 green ones, and 6 blue ones. Jane is going to reach into the bag and take out one marble without looking. Bill thinks Jane will get a red marble, and Jane thinks she will not. Who is more likely to be right?

○ Bill is more likely to be right.

● Jane is more likely to be right.

○ Bill and Jane are equally likely to be right.

○ I don't know.

				REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	FARC	MCTY	SMPL
AGE 9	P	28.4	27.0	30.9	26.7	29.5	30.4	26.4	30.3	29.2	30.3	26.8
	SE	1.3	2.1	3.1	1.9	2.0	1.7	1.9	2.4	2.5	3.5	1.6
GRD 4	P	27.0	26.2	30.1	23.4	28.7	30.3*	23.8*	28.3	27.8	26.3	26.1
	SE	1.6	2.3	4.2	2.3	3.2	2.1	2.0	3.6	3.5	4.4	1.9
AGE 13	P	28.8	26.7	26.2	31.0	30.6	35.0*	22.3*	26.7	29.5	34.6	28.4
	SE	1.3	2.6	2.8	2.4	2.2	1.6	1.7	2.0	2.2	5.8	1.7
GRD 8	P	29.3	27.8	25.4	31.0	31.6	36.2*	22.7*	27.1	29.4	32.3	29.8
	SE	1.5	3.8	3.6	2.3	2.3	1.9	1.9	2.5	2.6	4.9	2.2
AGE 17	P	39.8	34.2*	37.5	46.2*	38.6	49.2*	31.0*	36.4	43.1	33.8	40.2
	SE	1.5	1.8	4.3	2.4	2.9	1.9	2.2	2.8	3.5	4.8	2.3
GRD 11	P	41.2	36.9	38.9	45.7	40.8	51.8*	32.1*	36.9	42.6	35.9	43.1
	SE	1.6	2.0	3.9	3.1	3.6	2.1	2.2	3.5	3.9	6.7	2.1

Release #: E211041

NAEP #: S-E11041-919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	13 01-37	17 10-13
Timing: (in seconds) Exercise Total Time	49	39

		REGION				SEX		COMMUNITY SIZE (SOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A											
AGE 13 P	17.8	17.4	18.2	17.8	17.8	19.3	16.3	14.7	21.5	22.1	16.5
SE	1.2	1.9	2.3	2.0	3.2	1.5	1.4	2.6	2.3	3.2	1.8
GRD 8 P	19.4	17.7	18.5	22.2	18.7	22.2*	16.8*	17.0	22.6	21.1	18.1
SE	1.5	2.3	3.2	2.4	3.7	1.9	1.7	3.4	2.9	5.1	2.2
AGE 17 P	32.7	25.5*	29.9	38.3*	35.5	36.9*	28.7*	33.3	40.4*	42.8*	26.2*
SE	1.5	2.2	2.7	2.3	4.0	2.3	1.9	4.0	3.0	3.6	1.7
GRD 11 P	34.0	25.8*	30.2	39.0*	39.3	39.8*	28.7*	34.6	41.2*	46.2*	27.4*
SE	1.8	3.2	2.9	2.5	5.4	2.7	2.0	4.7	3.8	5.2	2.1
PART B											
AGE 13 P	59.6	55.8	61.3	60.9	59.8	60.8	58.4	52.1*	65.0*	62.7	60.2
SE	1.3	2.9	2.2	1.9	3.3	1.8	1.7	3.2	2.9	4.7	1.7
GRD 8 P	61.5	59.7	62.9	62.1	61.0	63.4	59.8	56.1	66.7*	57.8	61.9
SE	1.8	4.5	3.1	2.9	4.1	2.6	2.0	4.6	2.3	6.8	2.5
AGE 17 P	68.7	66.8	70.2	66.6	71.5	71.5	66.0	66.8	68.6	75.8*	68.3
SE	1.2	2.3	2.2	2.8	1.9	1.9	1.9	2.9	2.2	2.9	1.7
GRD 11 P	69.1	65.6	70.6	67.5	73.0	72.1	66.4	68.8	68.3	72.5	69.1
SE	1.4	2.4	3.1	2.8	2.6	2.0	2.2	3.4	2.7	5.0	1.9

A. **Mike has 2 quarters. What is the probability he will get 2 heads when he flips them?**

- ● $\frac{1}{4}$
- ○ $\frac{1}{3}$
- ○ $\frac{1}{2}$
- ○ $\frac{2}{3}$
- ○ $\frac{3}{4}$

- ○ I don't know.

B. **What is the probability he will get one head and one tail when he flips them?**

- ○ $\frac{1}{4}$
- ○ $\frac{1}{3}$
- ● $\frac{1}{2}$
- ○ $\frac{2}{3}$
- ○ $\frac{3}{4}$

- ○ I don't know.

Release #: 0E12306

NAEP #: 5-E12306-919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: 4D. Reasoning and Making Judgments

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

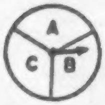
		13	17
Overlap: 1977-78 Package-Exercise:		03-31	01-28
Timing: (in seconds) Exercise Total Time		44	44

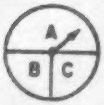
		NAT	REGION SE	REGION WEST	REGION CENT	REGION NE	SEX MALE	SEX FEM	COMMUNITY SIZE (DOC) BC	COMMUNITY SIZE (DOC) FABC	COMMUNITY SIZE (DOC) MCTY	COMMUNITY SIZE (DOC) SMPL
AGE 13	P	40.6	32.6*	37.9	44.8	46.2*	43.4*	37.6*	41.7	42.6	46.8*	37.7
	SE	1.4	2.6	3.4	2.8	2.2	2.0	1.9	3.2	3.3	2.5	2.0
GRD 8	P	46.3	40.3	40.9	52.4	49.8	51.0*	42.0*	51.7	45.8	46.8	43.8
	SE	1.9	3.6	4.1	4.5	2.3	2.6	2.3	3.9	3.9	4.4	3.2
AGE 17	P	64.3	54.1*	65.3	69.0*	66.1	64.5	64.1	65.0	69.8*	64.3	61.6
	SE	1.3	4.1	2.5	2.2	1.9	1.8	1.8	3.0	2.4	4.5	2.0
GRD 11	P	68.4	59.1*	66.3	73.1*	72.3	69.5	67.5	68.4	74.0*	71.1	65.6
	SE	1.6	4.7	2.9	2.5	2.6	2.1	2.1	3.1	2.6	5.4	2.4

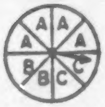
Kim spun a spinner 100 times and made a record of her results.

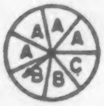
OUTCOME	A	B	C
NUMBER OF TIMES	55	30	15

Which spinner is most likely the one that Kim used? Fill in the oval beside the one you choose.

○ 

○ 

○ 

● 

○ I don't know.

Release #: ME12532

NAEP #: 5-M12532-919-3

1977-78 Content Area: E. Other Topics
1977-78 Objective: 3B. Understanding

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:
1977-78 Package-Exercise: 17 / 04-09

Timing: (in seconds)
Exercise Total Time 51

In the United States, of every 1000 babies born, 515 are boys. In a certain U.S. hospital, the last 27 babies born have been girls.

The next baby born in that hospital will

○ almost certainly be a girl (over 80% chance).

○ almost certainly be a boy (over 80% chance).

● have a slightly greater chance of being a boy than a girl.

○ have a slightly greater chance of being a girl than a boy.

○ have an equal chance of being a girl or boy.

○ I don't know.

			REGION				SEX		COMMUNITY SIZE (DOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17	P	30.4	24.5*	30.8	34.8	29.4	30.9	29.9	26.5	33.9	35.7	30.0
	SE	1.5	3.3	2.7	2.9	2.5	2.2	2.1	2.6	3.7	5.4	1.5
GRD 11	P	31.4	24.9	33.6	34.4	30.2	32.3	30.6	28.2	35.8	34.5	30.2
	SE	1.7	4.3	3.0	3.0	2.7	2.5	2.2	3.1	3.2	7.6	1.9

Release #: RE20541

NAEP #: 5-E20541-919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	13 10-25	17 07-36
Timing: (in seconds) Exercise Total Time	72	64

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 13	P	41.5	42.0	40.6	43.2	39.9	43.8	40.2	37.2	32.7*	44.6	47.3*
	SE	1.6	3.1	3.5	2.9	3.0	1.7	2.4	2.9	2.5	3.2	2.2
GRD 8	P	42.6	46.8	39.4	44.3	40.7	44.1	41.3	41.9	32.6*	44.5	48.3*
	SE	1.8	3.6	4.1	3.7	3.1	2.2	2.6	3.4	2.8	4.7	2.6
AGE 17	P	42.6	46.1	40.5	41.2	43.8	44.0	41.2	42.3	40.9	41.1	43.9
	SE	1.6	4.1	2.7	3.1	2.4	2.3	2.2	2.9	3.2	6.5	2.3
GRD 11	P	43.0	48.1	41.3	40.8	43.6	43.5	42.6	43.5	40.4	44.1	44.0
	SE	1.8	4.2	3.6	3.5	1.8	2.0	2.5	3.3	3.4	8.5	2.6
PART B												
AGE 13	P	5.5	4.2	4.6	5.1	8.1	5.6	4.4	4.9	7.1	9.7	3.9*
	SE	0.8	0.8	1.1	1.0	2.9	1.3	0.7	1.0	1.6	4.6	0.8
GRD 8	P	6.0	4.0	5.0	5.8	8.6	7.7	4.6*	5.8	7.4	11.7	3.8*
	SE	1.0	1.4	1.5	1.3	3.0	1.5	0.9	1.6	1.8	4.9	1.0
AGE 17	P	12.3	11.7	8.5	14.7	12.5	13.9*	10.6*	13.3	16.5*	12.6	9.0*
	SE	1.1	2.1	2.8	2.0	1.9	1.4	1.2	2.6	1.9	3.2	1.3
GRD 11	P	12.7	11.5	9.5	15.8	12.6	15.2*	10.5*	14.6	16.8*	12.3	9.8*
	SE	1.3	2.4	3.3	2.1	1.8	1.7	1.3	3.0	2.4	3.7	1.5
PART C												
AGE 13	P	24.4	22.4	19.6*	27.6	27.4	25.2	23.7	21.9	20.4	30.8*	26.1
	SE	1.3	2.5	1.4	3.3	1.7	1.6	1.9	2.6	2.2	3.3	2.0
GRD 8	P	25.2	24.3	23.9	26.5	28.3	27.0	23.8	24.4	21.2	32.9*	26.0
	SE	1.2	2.5	2.3	3.1	1.4	1.9	1.8	2.0	2.4	3.7	2.1
AGE 17	P	25.9	25.8	28.3	23.5	26.9	28.1	23.9	22.3	27.9	30.9	25.7
	SE	1.4	1.0	3.8	2.3	2.1	1.9	1.8	2.4	2.2	3.8	2.2
GRD 11	P	24.7	21.9	29.1	23.1	25.0	25.9	23.7	21.1	29.7*	26.9	23.4
	SE	1.5	2.7	4.3	2.5	2.3	2.1	2.0	3.3	[illegible]	5.3	2.2

Here are the ages of five children:

13, 8, 6, 4, 4

A. Which number represents the median?

- ○ 4
- ● 6
- ○ 7
- ○ 8
- ○ 9
- ○ 13

○ I don't know.

B. Which number represents the mean?

- ○ 4
- ○ 6
- ● 7
- ○ 8
- ○ 9
- ○ 13

○ I don't know.

C. Which number represents the mode?

- ● 4
- ○ 6
- ○ 7
- ○ 8
- ○ 9
- ○ 13

○ I don't know.

Release #: PE23688

NAEP #: 5-E20604-919-2

1977-78 Content Area: F. Other Topics
1977-78 Objective: 43. Reasoning and Making Judgments

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 13
1977-78 Package-Exercise: 09-36

Timing: (in seconds)
Exercise Total Time 46

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 13	P	12.3	10.5	13.2	13.1	12.1	12.9	11.6	11.3	11.7	10.6	13.6
	SE	0.9	1.4	1.3	1.3	2.0	1.0	1.3	1.1	1.1	2.1	1.6
GRD 8	P	12.7	10.7	14.5	14.3	11.5	14.5	11.1	11.8	12.5	10.7	13.8
	SE	0.8	1.5	1.4	1.2	1.7	1.3	1.4	1.2	1.4	2.3	1.9
PART B												
AGE 13	P	40.0	36.5	36.6	43.8*	41.9	37.7*	42.4*	36.6	40.6	40.3	41.6
	SE	1.3	3.1	3.2	1.8	2.5	1.7	1.6	2.1	4.2	2.1	2.0
GRD 8	P	44.6	41.3	40.3	49.8	46.1	42.4	46.6	40.0	44.5	45.5	47.2
	SE	1.4	3.6	3.4	2.4	2.7	2.2	1.9	2.8	4.7	3.4	1.9

A. If you could reorder only one shoe size for your shoe store, which statistic would be most helpful?

● The mode of the sizes sold recently
○ The mean of the sizes sold recently
○ The median of the sizes sold recently
○ Either the mean or the median of the sizes sold recently
○ The range of the sizes sold recently

○ I don't know.

B. If you wanted to know how many different shoe sizes to order, which statistic would be most helpful?

○ The mode of the sizes sold recently
○ The mean of the sizes sold recently
○ The median of the sizes sold recently
○ Either the mean or the median of the sizes sold recently
● The range of the sizes sold recently

○ I don't know.

Release #: R20941

NAEP #: S-R20941-919-123

1977-78 Content Area: I. Other Topics
1977-78 Objective: 4A. Routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	9 01-14	13 02-23	17 11-24
Timing: (in seconds) Exercise Total Time	33	23	21

Kate averages 10 miles per hour on her bike. At this rate how far will she travel in 5 hours?

○ 2 miles
○ 5 miles
○ 15 miles
● 50 miles
○ More information is needed to solve this problem.

○ I don't know.

				REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 9	P	53.7	47.2*	48.8	58.3	59.7*	54.9	52.5	47.3	60.4*	54.1	53.7
	SE	1.6	3.5	3.3	3.2	3.3	1.8	2.0	4.0	3.0	3.0	2.7
GRD 4	P	59.1	51.8	55.4	64.8	63.2	61.5	57.0	50.3*	64.8	60.4	60.4
	SE	2.0	4.4	4.1	4.3	3.6	2.3	2.6	4.8	3.6	4.4	3.1
AGE 13	P	87.6	81.8*	87.7	90.1*	89.9	87.2	88.0	85.4	90.0	86.4	87.7
	SE	0.8	2.0	1.1	1.2	2.1	1.2	0.9	2.3	1.4	4.0	1.1
GRD 8	P	91.1	88.5	91.3	92.5	91.7	91.3	90.9	90.8	91.7	89.9	91.2
	SE	0.8	1.2	1.2	1.1	2.3	1.4	0.9	1.3	1.4	4.9	0.9
AGE 17	P	93.5	90.5	91.7	94.7	96.5*	94.6	92.6	91.3	95.9*	97.3*	92.7
	SE	0.6	1.8	1.6	0.7	1.9	0.7	0.9	1.6	1.1	1.2	1.0
GRD 11	P	94.4	92.9	92.8	95.3	96.2	94.7	94.2	92.3	95.5	97.7*	94.3
	SE	0.7	1.5	2.2	0.8	1.1	0.8	1.0	2.1	1.3	1.3	0.9

Release #: 0E30123

NAEP #: 5-E30123-919-1

1977-78 Content Area: E. Other Topics
1977-78 Objective: 2C. Graphs and Tables

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Graph

Overlap: 9
1977-78 Package-Exercise: 06-27

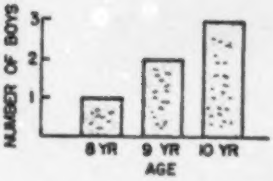
Timing: (in seconds)
Exercise Total Time 61

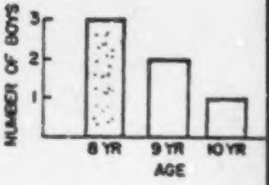
			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MDCT	SMPL
AGE 9	P	29.1	23.4*	23.5*	32.1	37.6*	28.0	30.2	25.8	35.2	20.8*	29.4
	SE	1.7	2.7	2.6	3.9	2.9	1.8	2.1	2.9	4.0	2.9	1.9
GRD 4	P	32.2	26.7	25.2*	36.1	40.1*	31.9	32.5	28.8	39.9	21.3*	32.0
	SE	2.3	3.5	2.8	4.9	3.4	2.2	2.5	3.6	5.2	5.1	2.0

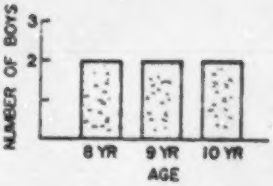
Here are the ages of six boys:

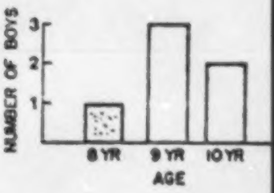
10, 9, 9, 8, 8, 8

Which bar graph presents this information?

○


●


○


○


○ I don't know.

Release #: RE30523

NAEP #: S-E30523-919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: 2C. Graphs and Tables

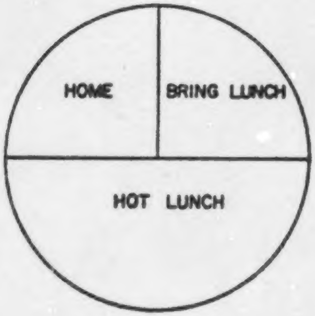
Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Graph

Overlap:
1977-78 Package-Exercise: 13 08-17 17 06-22

Timing: (in seconds)
Exercise Total Time 90 77

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PADC	HCTI	SMPL
PART A												
AGE 13	P	59.5	49.8*	58.7	64.5	63.6	59.0	60.1	57.8	68.4*	67.1	54.8*
	SE	1.6	3.0	2.4	3.8	2.7	1.7	2.1	3.2	3.0	6.4	2.3
GRD 8	P	64.3	55.1*	63.1	68.6	68.7	65.4	63.3	62.7	71.2*	74.2	59.3*
	SE	1.5	2.9	2.4	3.9	2.6	2.1	2.3	3.6	2.5	6.5	2.2
AGE 17	P	72.1	57.2*	72.6	77.9*	76.6	73.5	70.9	72.6	78.8*	77.1	67.9*
	SE	1.7	4.9	1.8	2.2	3.4	1.8	2.4	2.4	2.0	4.9	3.0
GRD 11	P	74.7	59.3*	76.3	79.7*	78.6	78.1*	71.8	75.7	80.6*	76.8	70.6
	SE	2.2	7.4	2.6	2.4	3.6	2.2	3.1	2.6	2.4	7.2	3.7
PART B												
AGE 13	P	51.1	37.6*	48.6	56.7	60.3*	50.8	51.5	47.3	63.1*	64.3*	45.2*
	SE	1.5	2.4	2.5	3.8	2.5	2.0	2.0	3.5	3.3	5.0	2.2
GRD 8	P	56.2	41.3*	53.6	62.9	64.1*	56.5	56.0	53.6	64.7*	67.2*	50.7*
	SE	1.8	3.5	2.6	4.3	2.7	2.4	2.3	3.3	3.5	5.2	2.8
AGE 17	P	67.4	51.8*	66.6	74.7*	71.7	70.8*	64.1*	66.0	75.3*	73.3	63.2*
	SE	1.5	3.5	3.6	1.8	2.1	1.7	2.2	3.0	2.5	4.7	2.4
GRD 11	P	70.0	57.5*	69.5	76.0*	72.3	76.1*	64.8*	70.2	75.8	75.9	66.0*
	SE	1.9	5.5	4.4	2.0	2.1	1.9	2.8	3.2	2.9	6.1	2.7
PART C												
AGE 13	P	44.4	29.5*	55.3*	50.9*	39.3*	48.3*	40.3*	42.3	51.6*	48.6	41.4
	SE	1.4	2.2	3.2	2.7	2.8	1.9	1.8	3.0	3.7	3.9	2.6
GRD 8	P	47.9	33.9*	59.4*	54.9*	41.9*	53.5*	42.7*	45.3	55.5*	50.4	44.5
	SE	1.5	2.5	3.4	2.5	2.4	2.0	2.0	3.2	3.4	3.6	2.7
AGE 17	P	60.5	45.9*	59.5	66.0*	66.4*	66.9*	54.3*	53.5*	70.7*	66.9	57.3
	SE	1.7	3.0	4.3	3.4	1.9	1.9	2.4	3.6	2.9	4.3	2.7
GRD 11	P	62.8	49.2*	62.2	67.7	67.7*	71.5*	55.4*	58.0	71.9*	66.0	59.4
	SE	1.9	3.9	4.7	3.5	2.0	2.0	2.9	4.1	3.0	5.3	3.0

KINDS OF LUNCHES STUDENTS EAT
AT WARREN JUNIOR HIGH SCHOOL



A. If 400 students eat lunch, about how many go home for lunch?

○ 25
● 100
○ 200
○ 300
○ 400

○ I don't know.

(Continued)

B. If 400 students eat lunch, what is the total number of students that either bring lunch or eat a hot lunch?

○ 75
○ 100
○ 200
● 300
○ 400

○ I don't know.

C. If you asked 30 students "Are you going home for lunch?" about how many would you expect to say "Yes"?

○ 0
● 8
○ 15
○ 30

○ I don't know.

Release #: BE31123

NAEP #: 5-E31123-919-23

1977-78 Content Area: H. Other Topics
1977-78 Objective: 2C. Graphs and Tables

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Table

Overlap:
1977-78 Package-Exercise: 13/02-40 17/07-31

Timing: (in seconds)
Exercise Total Time 74 74

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 13	P	18.4	15.1	17.5	19.2	21.4	20.6*	16.0*	14.0*	24.1*	19.9	17.3
	SE	0.9	1.8	2.1	1.3	2.2	1.3	1.4	1.5	1.9	3.7	1.4
GRD 8	P	21.8	16.7*	21.3	25.1*	23.0	25.3*	18.4*	19.0	25.9	24.1	20.1
	SE	1.3	1.9	3.2	1.5	3.1	1.8	1.8	2.2	2.7	4.8	1.9
AGE 17	P	32.3	25.6*	33.8	32.5	36.5	36.4*	28.4*	29.4	41.5*	33.7	28.6*
	SE	1.3	2.0	3.2	2.0	3.1	1.8	1.7	2.8	2.5	6.2	1.6
GRD 11	P	34.4	27.8*	35.3	35.6	37.9	39.2*	30.3*	31.8	43.6*	38.9	30.2*
	SE	1.6	2.3	5.1	1.9	3.3	2.3	2.0	3.4	2.8	7.9	1.8
PART B												
AGE 13	P	19.8	17.1	18.2	20.3	23.5*	22.0*	17.4*	15.5*	24.7*	21.1	19.1
	SE	0.9	1.6	2.3	1.6	1.8	1.3	1.4	1.5	2.1	4.2	1.3
GRD 8	P	23.1	18.1*	21.6	26.6*	25.0	26.7*	19.6*	20.2	26.9	24.8	21.9
	SE	1.2	1.6	3.1	1.9	2.5	1.7	1.6	2.0	2.7	5.7	1.5
AGE 17	P	33.9	30.1	35.5	32.5	37.8	36.8*	31.2*	31.0	39.4*	40.5	31.4
	SE	1.4	2.4	2.5	2.3	3.6	2.0	1.7	3.0	2.8	6.3	1.5
GRD 11	P	35.6	33.1	35.2	35.5	38.6	38.8	32.8*	33.7	40.6*	43.1	32.9
	SE	1.6	3.1	3.4	2.3	4.0	2.4	1.9	3.5	2.6	6.1	1.8
PART C												
AGE 13	P	78.3	73.8*	75.4	80.5	82.9*	79.7	76.8	71.4*	81 5	80.2	79.9
	SE	1.2	1.7	2.1	2.6	2.6	1.5	1.8	3.1	1.9	4.2	1.9
GRD 8	P	83.0	81.1	80.3	84.6	85.3	84.2	81.9	79.6	84.1	84.3	83.9
	SE	1.3	1.5	2.4	1.4	2.3	1.4	1.7	2.4	2.1	4.3	1.5
AGE 17	P	87.7	84.7*	87.0	90.8*	86.8	89.1	86.3	84.9	90.6*	87.3	87.5
	SE	0.8	1.6	1.8	1.2	1.9	1.4	0.8	2.6	1.5	2.9	1.0
GRD 11	P	93.4	89.3	90.6	92.6	87.9	91.9	89.0	88.2	91.9	91.1	90.4
	SE	0.7	1.7	1.1	1.1	1.9	1.2	0.9	2.1	1.3	2.8	0.9

AIRLINE PASSENGERS FOR FIRST SIX MONTHS OF THE YEAR

AIRPORTS	HUNDREDS OF PASSENGERS PER MONTH						TOTAL
	JAN	FEB	MAR	APR	MAY	JUN	
BAY CITY	9	3	5	7	2	4	30
CAMDEN	6	8	1	5	8	2	30
DOVER	8	5	9	6	6	3	37
FISKE	5	6	6	1	3	7	28
GRANGE	1	2	3	6	7	10	29
TOTAL	29	24	24	25	26	26	154

A. How many passengers used the Fiske airport in June?

○ 7
○ 28
○ 70
● 700
○ 2800

○ I don't know.

(Continued)

B. How many more passengers used the airports in January than in April?

○ 4
○ 5
● 400
○ 500
○ 2900

○ I don't know.

C. Which airport was the busiest during the first six months?

○ Bay City
○ Camden
● Dover
○ Fiske
○ Grange

○ I don't know.

Release #: RE32223

NALP #: 5-E32223-919-1

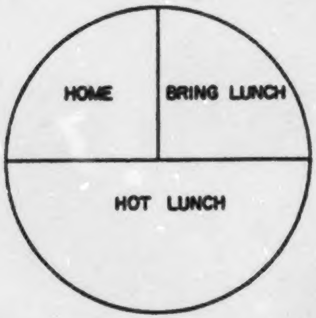
1977-78 Content Area: E. Other Topics
1977-78 Objective: 2C. Graphs and Tables

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Graph

Overlap: 9
1977-78 Package-Exercise: 05-35

Timing: (in seconds)
Exercise Total Time 66

KINDS OF LUNCHES STUDENTS EAT
AT WARREN JUNIOR HIGH SCHOOL



		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
			REGION				SEX		COMMUNITY SIZE (DOC)			
PART A												
AGE 9	P	29.1	25.6	26.6	33.8*	29.8	31.4*	26.7*	27.6	31.6	33.3	27.7
	SE	1.2	2.4	2.8	2.3	1.9	1.6	1.5	2.7	2.6	5.1	1.8
GRD 4	P	31.9	27.6	29.4	38.5*	31.5	35.3*	28.8*	31.3	34.5	32.8	30.6
	SE	1.4	2.5	3.1	2.6	2.0	1.8	1.7	2.7	2.5	5.6	2.1
PART B												
AGE 9	P	21.7	15.5*	20.2	23.0	27.5*	23.6*	19.7*	16.3*	27.6*	21.8	20.4
	SE	1.2	1.8	3.1	2.3	2.2	1.5	1.5	2.3	3.3	4.8	1.9
GRD 4	P	24.4	15.6*	21.9	26.9	31.5*	26.7	22.3	18.2*	30.7	22.7	23.7
	SE	1.4	2.2	3.2	3.0	2.5	1.8	1.8	2.6	3.7	6.1	2.5

A. If 400 students eat lunch, about how many go home for lunch?

○ 25
● 100
○ 200
○ 300
○ 400

○ I don't know.

B. If 400 students eat lunch, about how many bring lunch or eat a hot lunch?

○ 75
○ 100
○ 200
● 300
○ 400

○ I don't know.

Release #: RE32346

NAEP #: 5-E32346-919-23

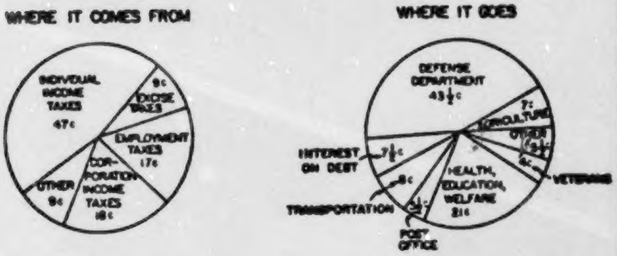
1977-78 Content Area: E. Other Topics
1977-78 Objective: 4D. Reasoning and Making Judgments

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Graph

		13	17
Overlap: 1977-78 Package-Exercise:		04-29	11-21
Timing: (in seconds) Exercise Total Time		76	73

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
PART A												
AGE 13	P	81.1	74.0*	77.0	87.8*	84.4	80.6	81.5	80.3	83.6	93.5*	78.9
	SE	1.2	3.5	2.6	1.3	2.4	1.6	1.4	2.5	2.8	1.6	2.0
GRD 8	P	85.8	84.1	79.2*	90.9*	88.4	85.4	86.1	86.3	85.1	94.2*	84.3
	SE	1.3	3.3	2.6	1.3	1.7	1.8	1.4	1.9	2.5	2.0	2.2
AGE 17	P	92.9	90.6	90.8	95.5	93.5	93.1	92.6	90.4	95.6	94.2	92.3
	SE	1.0	1.5	2.8	1.4	2.5	1.6	1.1	2.1	2.3	1.8	1.5
GRD 11	P	95.2	92.8	93.2	96.9	96.6	96.1	94.3	94.2	97.6*	94.4	94.2
	SE	0.9	1.6	3.1	0.8	1.1	0.9	1.1	1.4	0.9	3.0	1.7
PART B												
AGE 13	P	88.6	83.3*	87.3	93.0*	89.6	86.6*	90.6*	85.1	90.6	94.6*	88.5
	SE	0.9	2.9	2.1	1.1	1.8	1.2	1.1	2.3	1.7	2.3	1.3
GRD 8	P	93.0	89.6*	91.3	97.2*	93.2	92.0	93.9	92.0	92.7	98.5*	92.8
	SE	0.9	1.9	2.4	0.9	1.6	1.2	0.9	1.7	1.7	0.9	1.4
AGE 17	P	95.3	95.0	94.3	96.7	94.7	94.4	96.2	92.9	96.1	95.3	96.0
	SE	1.0	1.3	2.6	1.3	2.6	1.5	0.8	1.8	2.3	2.4	1.4
GRD 11	P	97.3	96.5	96.0	97.7	98.7	97.3	97.3	97.1	98.2	97.7	96.8
	SE	0.7	1.2	2.4	0.8	0.6	0.9	0.8	1.0	0.9	1.5	1.3
PART C												
AGE 13	P	37.5	35.3	35.5	43.0*	35.2	43.6*	31.3*	35.7	40.1	41.7	36.7
	SE	1.3	2.7	3.1	2.8	3.3	1.7	1.7	2.5	3.5	5.8	1.7
GRD 8	P	37.9	35.7	36.1	42.6	36.9	45.1*	31.2*	35.1	41.5	42.6	36.8
	SE	1.6	2.8	3.9	2.8	3.3	2.3	1.9	2.7	3.6	5.4	2.5
AGE 17	P	52.0	47.6	49.1	56.6*	52.8	59.7*	44.6*	46.7*	59.4*	57.7*	49.5
	SE	1.2	3.0	2.7	2.5	1.7	2.1	1.5	2.5	2.5	2.4	1.6
GRD 11	P	55.0	51.3	54.1	58.7	53.7	65.0*	46.0*	50.0*	[illegible]	64.0	53.5
	SE	1.5	3.7	2.7	3.2	2.3	2.4	1.6	2.7	3.5	4.8	1.9

THE FEDERAL GOVERNMENT DOLLAR



A. Where does the largest part of the Federal Government Dollar come from?

○ Excise taxes

○ Employment taxes

○ Corporation income taxes

● Individual income taxes

○ Defense Department

○ I don't know.

(Continued)

B. What part of the Federal Government Dollar is spent on Agriculture?

- ● 7¢
- ○ 21¢
- ○ 28 $\frac{1}{2}$¢
- ○ 43 $\frac{1}{2}$¢
- ○ 47¢
- ○ 93¢

- ○ I don't know.

C. If you pay $3000 in taxes, about how much of your tax money will be spent on Agriculture?

- ● $ 210
- ○ $1305
- ○ $1410
- ○ $2100
- ○ Not enough information given

- ○ I don't know.

Release #: EE50248

NAEP #: 5-E50248-919-123

1977-78 Content Area: E. Other Topics
1977-78 Objective: 4D. Reasoning and Making Judgments

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:	9	13	17
1977-78 Package-Exercise:	05-26	06-34	01-21
Timing: (in seconds) Exercise Total Time	75	65	55

The lost dog is small and black.

A. If I see a small brown dog, then

○ it might be the lost dog.
○ it must be the lost dog.
● it could not be the lost dog.

○ I don't know.

B. If I see a small, black dog, then

● it might be the lost dog.
○ it must be the lost dog.
○ it could not be the lost dog.

○ I don't know.

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A												
AGE 9	P	82.1	77.8*	81.1	85.4	83.6	80.8	83.5	77.3*	83.5	86.3	82.4
	SE	1.0	2.1	2.5	2.0	1.5	1.4	1.5	2.7	2.4	3.2	1.3
GRD 4	P	86.1	83.8	85.4	88.1	86.8	84.3	87.8	82.1	86.8	90.2	86.4
	SE	1.0	2.1	2.4	1.6	1.8	1.4	1.4	3.1	1.7	3.9	1.2
AGE 13	P	92.6	91.7	91.4	94.1	92.9	91.7	93.5	89.9	94.3	92.5	93.1
	SE	0.8	1.3	1.4	1.1	2.3	1.1	0.8	1.4	1.4	3.5	1.2
GRD 8	P	94.1	93.0	93.4	94.5	95.3	93.8	94.4	93.3	96.2	95.3	93.4
	SE	0.7	1.3	0.9	1.3	1.4	1.0	0.8	1.3	0.9	0.9	1.3
AGE 17	P	96.2	95.8	95.8	95.9	97.3	95.3	97.0	95.9	96.8	97.4	95.8
	SE	0.4	1.0	0.9	0.9	0.7	0.7	0.6	1.0	1.0	1.3	0.6
GRD 11	P	96.3	96.8	95.7	96.0	97.5	95.5	97.0	96.2	96.0	98.7*	96.0
	SE	0.5	0.9	1.2	1.0	0.6	0.8	0.7	1.1	1.3	0.8	0.7
PART B												
AGE 9	P	38.8	36.9	35.0	40.4	42.9	38.2	39.5	35.9	45.6*	37.2	36.7
	SE	1.4	1.7	2.5	2.7	3.5	1.7	1.5	1.9	2.3	5.0	1.9
GRD 4	P	40.2	38.6	36.0	42.8	42.8	39.7	40.7	37.4	45.4	41.2	38.3
	SE	1.5	1.7	2.4	3.4	3.5	1.9	1.7	2.2	2.9	5.3	2.2
AGE 13	P	71.2	63.7*	69.6	76.5*	73.3	70.3	72.1	66.8*	75.8*	78.8	69.7
	SE	1.1	2.6	1.7	1.6	2.1	1.7	2.0	2.4	1.9	4.3	1.7
GRD 8	P	74.2	67.3*	72.3	78.7*	76.6	73.9	74.4	69.5	77.5	88.5*	72.2
	SE	1.3	3.6	2.0	2.0	2.8	1.9	2.4	2.7	2.3	2.7	1.9
AGE 17	P	86.2	81.6*	86.4	88.5	87.1	87.5	85.0	85.6	87.6	88.2	85.7
	SE	0.9	1.9	2.5	1.2	1.8	1.0	1.3	1.7	2.0	3.5	1.3
GRD 11	P	88.1	84.4	85.9	91.1*	69.6	89.4	87.0	87.0	89.3	91.1	87.7
	SE	1.0	2.6	2.5	1.0	1.9	1.1	1.4	2.0	2.0	2.7	1.3

Release #: RE50343

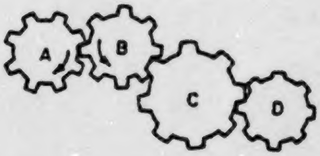
NAEP #: S-E50343-91S

1977-78 Content Area: E. Other Topics
1977-78 Objective: 4B. Non-routine Problems

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

	13	17
Overlap: 1977-78 Package-Exercise:	07-27	02-40
Timing: (in seconds) Exercise Total Time	35	29

Gear A is rotating clockwise. Gear B is rotating counterclockwise. Which way is Gear D rotating?



○ Clockwise

● Counterclockwise

○ Can't tell

○ I don't know.

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 13	P	72.7	64.2*	76.2	76.4	72.5	74.0	71.3	68.8	78.9*	77.6	71.0
	SE	1.5	2.9	2.9	2.6	3.6	2.0	1.8	2.9	2.4	5.5	2.2
GRD 8	P	76.8	69.5*	79.8	79.2	77.5	78.4	75.5	72.9	81.0	82.5	75.6
	SE	1.3	2.8	2.7	2.4	2.5	2.0	1.7	2.8	2.7	4.3	2.1
AGE 17	P	81.0	76.7*	81.8	81.7	82.8	83.5*	78.5*	76.3*	82.1	84.7	81.6
	SE	1.0	2.0	1.8	2.0	2.3	1.4	1.7	2.0	2.6	5.1	1.2
GRD 11	P	83.6	78.4*	83.8	84.1	87.6*	86.1*	81.4	76.7*	85.7	87.2	84.7
	SE	1.1	1.7	2.8	2.0	2.1	1.4	1.7	2.5	2.2	4.5	1.5

Release #: RI50448

NAEP #: 5-E50448-919-123

1977-78 Content Area: E. Other Topics
1977-78 Objective: 4D. Reasoning and Making Judgments

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	9	13	17
	04-34	08-16	03-08
Timing: (in seconds) Exercise Total Time	60	45	37

Two team captains take turns choosing players for their teams. Ellen is always chosen first. Chris is always chosen second. If Ellen and Chris are never captains, how often do they play on the same team?

- ○ Always
- ○ Frequently
- ○ Very rarely
- ● Never

- ○ I don't know.

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 9	P	33.6	29.6	33.6	36.0	34.4	36.3	30.8	30.3	39.7*	32.0	32.6
	SE	1.9	4.6	5.7	2.3	2.3	2.6	2.1	2.6	2.7	5.4	2.9
GRD 4	P	35.8	31.6	35.6	38.5	36.9	39.5	32.3*	32.1	39.4	32.6	36.2
	SE	2.3	5.6	5.5	2.3	2.1	2.9	2.2	3.1	3.0	6.5	3.0
AGE 13	P	62.4	51.9*	63.9	65.3	67.4*	63.0	61.7	55.4*	71.0*	67.8*	61.0
	SE	1.5	3.4	3.6	2.1	2.6	1.9	1.8	3.4	2.9	2.5	2.4
GRD 8	P	67.6	58.2*	67.6	71.3	71.5	68.5	66.7	62.6	74.2*	69.5	66.1
	SE	1.6	2.7	4.1	2.6	3.1	2.1	2.1	3.7	3.0	3.4	2.3
AGE 17	P	77.4	71.9	74.4	83.6*	77.1	78.4	76.5	72.6	81.8	74.3	77.7
	SE	1.1	3.7	2.7	1.0	1.9	1.4	1.6	3.7	2.5	6.0	1.5
GRD 11	P	81.3	76.3	80.3	85.7*	80.0	82.6	80.1	77.8	85.3	80.3	80.8
	SE	1.0	3.5	2.3	1.4	1.7	1.6	1.6	3.3	2.4	4.8	1.4

Release #: BE70261K

NAEP #: S-E70261K919-23

1977-78 Content Area: K. Other Topics
1977-78 Objective: Hand Held Calculator Routine Computation

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Calculator

Overlap: 1977-78 Package-Exercise:	13 11-01	17 12-01
Timing: (in seconds) Exercise Total Time	130	124

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 13	P	91.6	88.3	91.4	93.1	93.2	91.0	92.1	83.9*	94.8*	95.1	90.9
	SE	0.8	2.6	1.7	0.9	1.5	1.0	1.1	1.3	1.4	2.2	1.5
GRD 8	P	94.7	94.4	92.5	94.8	97.2	94.3	95.0	90.6*	96.0	97.9*	95.4
	SE	0.6	1.4	1.6	0.9	1.0	0.8	0.8	1.7	1.2	1.5	0.8
AGE 17	P	95.5	93.0*	95.4	96.4	96.4	94.9	96.0	94.7	96.7	94.2	95.4
	SE	0.5	1.3	1.0	0.7	1.3	0.9	0.7	0.8	0.9	2.6	0.8
GRD 11	P	96.4	95.7	95.8	96.8	97.3	95.1	97.5*	95.5	97.4	92.0	96.8
	SE	0.5	1.2	1.1	0.6	1.5	1.1	0.5	1.0	0.8	3.8	0.7
PART B												
AGE 13	P	92.4	88.0	91.9	96.0*	92.8	92.0	92.9	91.0	94.8*	96.3	91.3
	SE	1.0	2.7	2.0	0.8	2.3	1.0	1.1	2.3	1.0	2.6	1.6
GRD 8	P	95.3	92.8	94.3	96.8	95.8	94.5	95.5	94.1	95.9	98.5*	94.4
	SE	0.7	2.2	1.5	0.9	1.2	1.0	0.8	1.6	1.0	1.2	1.3
AGE 17	P	96.6	93.3*	97.2	97.8	97.2	95.7	97.5	96.6	98.2*	94.9	95.9
	SE	0.4	1.0	0.6	0.8	0.8	0.8	0.5	1.0	0.6	2.1	0.7
GRD 11	P	97.4	95.6*	97.2	98.5*	97.7	96.7	98.1	97.1	98.2	96.5	97.4
	SE	0.4	0.8	0.8	0.5	0.9	0.7	0.4	1.0	0.8	2.1	0.5
PART C												
AGE 13	P	94.9	93.5	94.5	97.8*	93.2	94.2	95.6	93.6	97.9*	95.7	93.9
	SE	0.9	1.6	1.4	0.6	3.6	1.2	0.9	1.1	0.9	1.8	1.7
GRD 8	P	96.9	96.4	95.1	98.3	97.5	96.4	97.3	95.7	98.2	97.1	96.7
	SE	0.5	0.8	1.6	0.7	1.0	0.8	0.5	1.5	0.9	2.1	0.8
AGE 17	P	97.6	97.1	97.5	97.4	98.5	97.0	98.2	97.7	97.8	99.0	97.3
	SE	0.4	0.9	0.8	0.6	0.6	0.6	0.4	0.7	0.7	1.0	0.6
GRD 11	P	97.8	97.6	97.4	97.7	98.8	97.5	98.2	97.4	98.0	98.7	97.9
	SE	0.4	1.0	0.7	0.7	0.6	0.7	0.5	0.9	0.9	1.3	0.6
PART D												
AGE 13	P	81.9	78.0	79.3	87.9*	80.9	80.0	83.7	76.1	87.2*	89.2*	80.7
	SE	1.2	3.0	2.3	1.4	3.5	1.5	1.6	3.7	2.3	1.9	2.0
GRD 8	P	86.6	84.1	82.2*	91.5*	87.9	86.5	86.7	79.6	88.6	89.9	88.4
	SE	1.1	2.3	2.2	1.2	3.4	1.4	1.4	4.1	2.3	3.0	1.0
AGE 17	P	90.9	88.8	87.9	94.7*	90.9	90.3	91.5	89.6	91.5	93.9	90.9
	SE	0.9	2.0	2.8	0.8	1.3	1.0	1.5	1.7	1.6	2.3	1.6
GRD 11	P	93.1	92.9	89.4	95.4*	94.1	93.0	93.1	91.5	93.8	98.7*	92.0
	SE	0.9	1.8	2.9	0.6	0.9	1.0	1.6	1.6	1.4	1.3	1.7

Compute.

A. $\begin{array}{r} 671 \\ \underline{\times 402} \end{array}$

ANSWER ______________

B. $\begin{array}{r} 43 \\ 71 \\ 75 \\ \underline{+92} \end{array}$

ANSWER ______________

C. $\begin{array}{r} 231 \\ \underline{-189} \end{array}$

ANSWER ______________

D. $28\overline{)3052}$

ANSWER ______________

R70261K23
PARTS A&B

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE
11 = 269,742 OR 269742
12 = COMMAS MISPLACED, BUT NUMBER CORRECT
20 = OTHER
21 = 2472, 2471, 2402 OR 2401
22 = 28182 OR 4026
23 = 269,642 OR 249,742
24 = 1073, 269 OR ATTEMPTED 671 + 402 OR 671 - 402
25 = MULTIPLIED CORRECTLY, BUT MADE AN ERROR IN ADDITION
39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE
11 = 281
20 = OTHER
21 = 2711
22 = 271
39 = I DON'T KNOW.

R70261K23
PARTS C&D

SCORING GUIDE: PARTS C & D

Categories are listed below.

PART C:

00 = NO RESPONSE
11 = 42
20 = OTHER
21 = 420 OR ATTEMPTED (231 + 189)
22 = 152, 142 OR 52
23 = 158
39 = I DON'T KNOW.

PART D:

00 = NO RESPONSE
11 = 109
20 = OTHER
21 = .0091743, .00917, .009174, 0091, .0092 OR ANY OTHER DECIMAL PLACEMENT OR ATTEMPTED TO DIVIDE 28 BY 3052
22 = 19
39 = I DON'T KNOW.

Release #: RE73462K

NAEP #: S-E70462E919-123

1977-78 Content Area: E. Other Topics
1977-78 Objective: Hand Held Calculator No Formal Training
Computation

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Calculator

Overlap:	9	13	17
1977-78 Package-Exercise:	07-05	11-04	12-04
Timing: (in seconds) Exercise Total Time	48	37	36

Compute.

A. 7 ÷ 13 =

○ 18571428
○ 1.8571428
○ 5384615
● 0.5384615

○ I don't know.

B. 10 ÷ 25 =

● 0.4
○ 2.5
○ 4
○ 25

○ I don't know.

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A												
AGE 9	P	50.7	43.0*	54.9	48.6	57.9*	51.4	50.0	50.2	52.1	56.6	49.3
	SE	1.4	2.0	3.2	2.6	2.7	1.6	2.0	3.9	2.1	5.9	2.3
GRD 4	P	51.8	43.7*	58.8*	48.9	57.1	53.1	50.7	52.6	51.3	58.6	50.6
	SE	1.5	2.1	3.0	3.1	3.0	1.9	2.2	3.7	2.2	6.0	2.5
AGE 13	P	50.3	44.6*	48.5	54.1*	51.9	51.3	48.8	47.1	51.9	59.8*	48.9
	SE	1.2	2.9	2.4	2.3	2.0	1.5	1.7	2.3	2.3	3.3	2.3
GRD 8	P	53.7	49.4	51.5	57.5	55.4	54.5	53.0	51.7	53.0	72.0*	52.1
	SE	1.4	3.0	2.4	2.8	2.8	1.7	2.0	2.6	2.8	3.1	2.4
AGE 17	P	63.5	62.2	54.8*	67.1*	68.5*	65.5	61.6	60.2	68.8*	69.2	61.5
	SE	1.3	2.3	2.9	1.8	2.6	1.9	1.3	2.9	2.4	3.4	2.1
GRD 11	P	65.4	65.7	55.9*	69.1	70.1	60.8	62.4*	59.8	71.6*	76.5*	63.4
	SE	1.4	2.7	3.0	2.0	2.8	2.4	1.5	3.2	2.5	1.7	2.2
PART B												
AGE 9	P	65.2	59.1*	60.1	67.6	74.4*	61.1*	69.3*	62.1	68.2	66.9	65.0
	SE	1.3	2.4	3.2	2.3	1.9	1.8	1.8	2.4	3.6	7.2	2.1
GRD 4	P	70.8	66.6	65.3	74.9	75.0	67.3*	73.8	68.3	70.9	72.7	71.6
	SE	1.5	2.9	3.6	2.6	2.1	1.9	1.9	2.4	4.4	7.4	2.4
AGE 13	P	72.5	70.9	69.7	75.8	73.2	71.6	73.3	70.3	74.4	74.5	72.2
	SE	1.1	2.8	2.4	1.9	2.1	1.8	1.4	2.5	2.8	2.3	1.5
GRD 8	P	75.9	75.2	73.1	78.8	76.3	73.7	77.8	74.4	75.9	80.2	76.0
	SE	1.2	2.5	2.6	1.9	2.7	2.3	1.5	2.8	2.8	4.5	1.8
AGE 17	P	83.5	83.1	76.3*	87.0*	86.4	82.9	84.0	82.4	81.6	93.5*	83.7
	SE	0.9	1.5	2.0	1.5	1.7	1.4	1.1	1.8	1.6	2.6	1.3
GRD 11	P	85.2	86.1	77.3*	88.6*	88.4	85.9	84.6	82.0	84.1	95.7*	86.2
	SE	0.9	2.1	1.6	1.7	2.0	1.5	1.4	3.2	1.7	2.3	1.3

Release #: RE70565K

NAEP #: S-E70565K919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: Hand Held Calculator Applications

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Calculator

Overlap:	13	17
1977-78 Package-Exercise:	11-05	12-05
Timing: (in seconds)		
Exercise Total Time	35	27

The length of a rectangle is 9.8 cm. The width is 5.6 cm. What is the area?

ANSWER ______________ square cm

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 13	P	36.2	26.8*	29.2*	41.1	47.1*	36.1	36.2	33.5	44.8*	56.7	29.7*
	SE	1.8	3.2	3.6	3.3	4.2	1.8	2.3	3.9	4.5	11.6	2.4
GRD 8	P	42.5	33.9*	35.1	49.0*	53.0*	43.6	41.6	38.1	48.9	63.4	37.1
	SE	2.1	3.0	4.6	3.7	5.0	2.2	2.8	4.7	4.9	11.5	2.9
AGE 17	P	66.2	55.9*	56.0*	71.7*	78.0*	69.3*	63.3*	62.7	69.4	73.8	65.2
	SE	1.6	3.0	3.4	2.8	2.0	1.6	2.2	4.0	3.5	8.9	2.1
GRD 11	P	69.3	61.2*	59.0*	72.9	82.2*	72.4	66.6*	65.5	72.2	76.4	68.8
	SE	1.7	4.2	3.4	2.9	2.7	2.0	2.2	4.1	3.6	11.3	2.1

E70565K23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 54.88, 54.9, OR 55 WITH OR WITHOUT UNITS

12 = 54.8

20 = OTHER

21 = 15.4 OR ATTEMPTED 9.8 + 5.6 WITH ANY DECIMAL PLACEMENT

22 = 4.2 OR ATTEMPTED 9.8 - 5.6 WITH ANY DECIMAL PLACEMENT

23 = 30.8

24 = 1.75, .5714285 OR ATTEMPTED 9.8 DIVIDED BY 5.6 OR 5.6 DIVIDED BY 9.8

25 = 5488, OR ANY DECIMAL PLACEMENT OTHER THAN CATEGORY 11

39 = I DON'T KNOW.

Release #: RE71361E

NAEP #: 5-E71361E919-1

1977-78 Content Area: E. Other Topics
1977-78 Objective: Hand Held Calculator Routine Computation

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Calculator

Overlap: 9
1977-78 Package-Exercise: 07-10

Timing: (in seconds)
Exercise Total Time 73

			REGION				SEX		COMMUNITY SIZE (SOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A												
AGE 9	P	85.2	79.8*	83.6	88.7*	88.5	83.2*	87.2*	83.1	87.7	89.3	84.8
	SE	1.0	2.8	1.7	1.3	1.9	1.5	1.2	2.4	2.7	3.9	1.5
GRD 4	P	89.2	84.6	87.3	92.8*	91.2	88.6	89.7	87.1	90.5	96.7*	88.8
	SE	1.3	3.2	1.8	1.0	1.8	1.4	1.1	2.0	2.8	1.2	1.6
PART B												
AGE 9	P	84.2	76.8*	83.2	87.3*	89.5*	82.5	85.9	81.8	88.2*	86.2	83.1
	SE	1.0	1.8	2.3	1.7	1.5	1.3	1.4	2.5	2.3	3.3	1.4
GRD 4	P	88.5	80.9*	85.9	91.1	91.8*	88.4	88.6	88.5	90.1	94.9*	86.8
	SE	1.3	2.9	1.6	1.4	1.2	1.1	1.4	1.8	2.4	1.7	1.7
PART C												
AGE 9	P	74.1	67.8*	69.9	76.1	83.0*	69.9*	78.3*	73.2	76.6	75.7	73.1
	SE	1.4	2.5	3.2	2.3	2.0	1.8	1.5	3.2	2.7	8.4	1.9
GRD 4	P	79.3	74.3	76.9	80.4	85.6*	76.3*	82.0*	79.6	80.8	81.5	78.2
	SE	1.2	2.9	2.9	1.5	1.6	1.9	1.3	2.3	2.5	6.8	1.8

Find the products.

A. $\begin{array}{r} 48 \\ \times\ 4 \\ \hline \end{array}$

ANSWER ______________

B. $\begin{array}{r} 408 \\ \times\ \ 4 \\ \hline \end{array}$

ANSWER ______________

C. $\begin{array}{r} 671 \\ \times 402 \\ \hline \end{array}$

ANSWER ______________

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 192

20 = OTHER

21 = 1632

22 = 52

23 = 48

24 = 12

25 = 484 OR 448

39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE

11 = 1632

20 = OTHER

21 = 412

22 = 102

23 = 404

24 = 192

25 = 16032

39 = I DON'T KNOW.

SCORING GUIDE: PART C

Categories are listed below.

PART C:

00 = NO RESPONSE

11 = 269742

20 = OTHER

21 = 1073

22 = 1.6691542, 1.67 OR OTHER ROUNDING

23 = 269

24 = 671402 OR 402671

39 = I DON'T KNOW.

Release #: RE71565K

NAEP #: 5-E71565E919-1

1977-78 Content Area: E. Other Topics
1977-78 Objective: Hand Held Calculator Applications

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Calculator

Overlap: 9
1977-78 Package-Exercise: 07-20

Timing: (in seconds)
Exercise Total Time 48

				REGION			SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 9	P	2.5	3.2	1.4	2.9	2.2	2.5	2.4	3.2	0.9*	6.9	2.1
	SE	0.4	0.8	0.4	1.0	1.1	0.6	0.6	1.4	0.3	2.4	0.4
GRD 4	P	3.0	3.8	1.8	3.7	2.6	3.4	2.6	4.3	1.0*	9.0*	2.4
	SE	0.6	1.0	0.7	1.3	1.4	0.8	0.7	2.0	0.3	2.8	0.5

A class of 26 fourth grade students is going to visit a museum. They will be driven there in cars. Each car can hold 4 students. How many cars are needed?

ANSWER ____________

E71565K1

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE
11 = 7 CARS OR 7
20 = OTHER
21 = 6.5 OR 6 1/2
22 = 22
23 = 65 OR DECIMAL PLACEMENT OTHER THAN CATEGORY 21
24 = 30
25 = 6 CARS OR 6
26 = 104 OR OTHER DECIMAL PLACEMENT
27 = 426 OR 264
39 = I DON'T KNOW.

Release #: RE71761K

NAEP #: S-E71761K919-3

1977-78 Content Area: E. Other Topics
1977-78 Objective: Hand Held Calculator Non-routine Computation

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Calculator

Overlap:
1977-78 Package-Exercise: 17 / 12-09

Timing: (in seconds)
Exercise Total Time 41

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 17	P	12.9	18.1	8.9*	12.5	16.3	14.4	11.4	13.8	13.5	17.6	11.4
	SE	1.1	2.3	1.4	1.5	3.1	1.7	1.2	2.5	1.6	4.6	1.3
GRD 11	P	13.7	15.5	8.9*	12.6	18.9	15.5	12.1	13.7	13.6	20.8	12.7
	SE	1.2	2.4	1.5	1.5	3.8	1.8	1.6	2.9	1.8	8.0	1.4
PART B												
AGE 17	P	1.1	1.3	1.8	0.8	0.6	1.5	0.8	1.3	0.6	0.0*	1.5
	SE	0.3	0.9	0.8	0.4	0.4	0.5	0.3	0.5	0.5	0.0	0.6
GRD 11	P	1.0	1.8	1.8	0.5	0.0*	1.2	0.8	0.8	0.3	0.0*	1.6
	SE	0.3	1.2	0.8	0.4	0.0	0.6	0.3	0.5	0.3	0.0	0.6

Compute.

A. (3.72 × 10[illegible]) (2.5 × 10[illegible])

ANSWER ______________

B. 8,765,432 × 97

ANSWER ______________

E71761K3
PART A

SCORING GUIDE: PART A

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 9.30 X 10^8

12 = 930,000,000

20 = OTHER

21 = 13950 OR OTHER DECIMAL PLACEMENT

22 = 397, 6.22 OR OTHER DECIMAL PLACEMENT

23 = 930 OR OTHER DECIMAL PLACEMENT EXCEPT CATEGORIES 11 AND 12 INCLUDING SCIENTIFIC NOTATION WITH WRONG EXPONENT ON THE 10

39 = I DON'T KNOW.

E71761K3
PART B

SCORING GUIDE: PART B

Categories are listed below.

PART B:

00 = NO RESPONSE

11 = 850,246,904 WITH NOTHING WRITTEN ON THE PAGE EXCEPT THE ANSWER OR SOMETHING OTHER THAN CATEGORIES 12 AND 25

12 = 850,246,904 WITH 788,888,880 + 61358024 OR 876543200 - 26296296 WRITTEN ON PAGE

20 = OTHER

21 = IT OVERFLOWS THE CALCULATOR,
NUMBERS ARE TOO BIG FOR THE MACHINE OR
CAN'T BE DONE

22 = 85024690 OR ANY DECIMAL PLACEMENT OR MAY ALSO SAY MACHINE IS BLINKING

23 = MACHINE IS BLINKING, IT'S BUSTED, ETC.

24 = 8.502469×10^8, 8.5×10^8 OR 8.5025×10^8

25 = 850,246,904 WITH 8765432 X 97 DONE BY HAND ON THE PAGE

39 = I DON'T KNOW.

Release #: RE80183

NAEP #: 5-E80183-919-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: Computer Programming

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap: 1977-78 Package-Exercise:	13 08-29	17 07-23
Timing: (in seconds) Exercise Total Time	101	75

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 13	P	13.8	15.2	10.9	12.9	16.5	14.9	12.6	15.3	12.9	26.4*	11.2*
	SE	1.0	2.2	1.7	1.5	2.3	1.3	1.2	1.6	1.6	4.4	1.5
GRD 8	P	15.2	16.1	11.2*	14.6	18.7	16.4	14.2	15.9	14.3	30.2*	12.4
	SE	1.2	2.7	1.9	2.1	2.6	1.5	1.6	1.8	1.9	5.6	1.6
AGE 17	P	21.0	19.0	23.0	23.0	18.0	23.2*	18.9*	21.0	24.8	26.8	18.2*
	SE	1.3	2.6	2.5	2.4	2.6	1.7	1.4	3.3	3.3	3.0	1.5
GRD 11	P	21.8	20.3	23.5	23.1	19.4	24.5	19.4*	22.2	26.0	25.8	19.0
	SE	1.5	3.6	3.1	2.7	2.8	2.3	1.6	3.6	3.6	2.4	1.6

This is a BASIC program.

```
 5  LET   T=3
10  PRINT  T
15  LET   T=T+3
20  IF   T<35 THEN 10
25  END
```

What would be printed in the output? Fill in the oval above the one you choose.

○	○	○	○	●	○
3	6	33	3	3	3
			3	6	6
			3	9	9
			3	12	12
			3	15	15
			3	18	18
			3	21	21
			3	24	24
			3	27	27
			3	30	30
			3	33	33
					36
					39
					42
					.
					.
					.

○ I don't know.

Release #: EE80283

NAEP #: 5-E80283-919-23

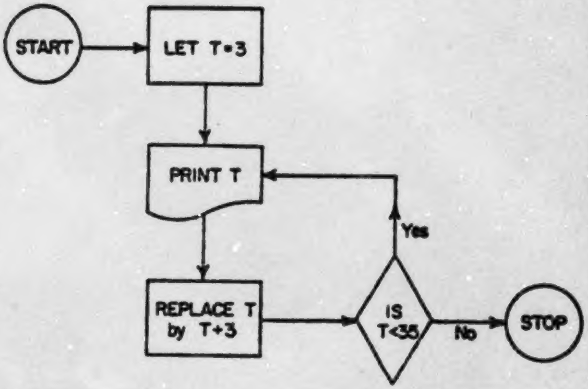
1977-78 Content Area: E. Other Topics
1977-78 Objective: Computer Programming

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Picture

	13	17
Overlap: 1977-78 Package-Exercise:	10-16	10-18
Timing: (in seconds) Exercise Total Time	101	61

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 13	P	10.8	10.7	9.2	12.0	11.0	10.3	11.2	9.3	11.6	9.9	11.2
	SE	0.9	2.0	1.9	1.6	1.5	0.9	1.4	2.1	2.1	2.2	1.2
GRD 8	P	11.9	12.3	11.0	12.2	12.1	11.6	12.2	10.0	13.3	13.6	11.5
	SE	1.1	2.7	2.7	1.6	2.2	1.4	1.5	2.8	2.5	3.0	1.5
AGE 17	P	20.9	15.6*	18.3	24.4*	24.4	23.6*	18.4*	26.0	23.5	20.9	16.8*
	SE	1.1	0.8	2.4	1.6	3.5	1.8	1.2	3.7	2.2	3.0	1.3
GRD 11	P	22.5	17.0*	21.0	25.3	25.6	25.7*	19.6*	30.1*	24.5	24.5	17.2*
	SE	1.3	1.4	2.7	1.7	4.1	2.1	1.4	4.1	2.3	2.3	1.5

This is a flow chart.



What would be printed in the output? Fill in the oval above the one you choose.

○	○	○	○	●	○
3	6	33	3	3	3
			3	6	6
			3	9	9
			3	12	12
			3	15	15
			3	18	18
			3	21	21
			3	24	24
			3	27	27
			3	30	30
			3	33	33
					36
					39
					42
					.
					.
					.

○ I don't know.

APPENDIX C

RELEASED EXERCISES MEASURING CHANGE FROM THE 1972-73 MATHEMATICS ASSESSMENT

Release #: BA10331

NAEP #: 5-A11003-829-1

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3A. Translation

1972-73 Content Area: A. Number and Numeration Concepts
1972-73 Objective: I. Recall and/or Recognition of Definitions, Facts, and Symbols

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	9
1977-78 Package-Exercise:	06-37
1972-73 Package-Exercise:	06-18

Timing: (in seconds)
Exercise Total Time 18

Write the number five hundred twenty-two.

ANSWER ______________________

A10331-1
A11003-1

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 9	P	87.8	84.0*	87.9	87.9	91.9*	86.4	89.1	79.3*	93.6*	87.2	89.2
	SE	1.2	1.5	1.4	3.1	1.6	1.4	1.4	4.7	1.0	2.3	1.3
GRD 4	P	92.1	89.9	91.7	91.5	95.8*	92.2	92.1	85.4	97.8*	93.1	92.4
	SE	1.4	1.8	1.8	4.0	0.9	1.2	1.9	5.9	0.7	1.7	1.2

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE
11 = 522
20 = OTHER
21 = 500202 OR 500 20 2
22 = 50022 OR 500 22
23 = 5202 OR 5022
39 = I DON'T KNOW.

Release #: NA13532

NAEP #: 5-A23009-429-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

1972-73 Content Area: A. Number and Numeration Concepts
1972-73 Objective: III. Understand Mathematical Concepts and Processes

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	04-35	06-31
1972-73 Package-Exercise:	04-24	06-02

Timing: (in seconds)		
Exercise Total Time	24	23

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 13	P	35.6	26.9*	37.5	37.8	40.1	39.0*	32.2*	35.6	39.0	43.9	32.7
	SE	1.8	3.6	3.6	3.2	4.3	2.3	2.0	3.4	4.3	4.6	2.5
GRD 8	P	43.3	29.9*	40.8	45.8	43.2	48.9*	36.1*	40.9	43.0	50.4	36.8
	SE	2.2	3.8	5.2	3.6	4.9	3.1	2.2	3.4	4.7	8.3	3.7
AGE 17	P	52.7	41.5*	52.8	58.5*	54.2	57.5*	48.1*	49.7	57.9	55.7	50.8
	SE	1.7	3.0	4.1	3.4	2.3	1.9	2.2	3.2	3.3	4.5	2.3
GRD 11	P	55.0	44.4*	55.4	61.2*	54.3	60.8*	49.9*	52.8	59.7	54.3	53.3
	SE	1.8	3.3	4.9	3.8	2.5	2.4	2.6	3.6	3.7	5.8	2.6

Express $\frac{9}{100}$ as a percent.

ANSWER ______________________

A13532-23
A23009-23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 9%, 009% OR NINE PERCENT

12 = 9 OR 009 WITH NO LABEL

20 = OTHER

21 = .09 WITH OR WITHOUT LABEL

22 = 90 OR .9 WITH OR WITHOUT LABEL

23 = 11%, 11.1, .11, 1/9, 11 1/9 OR ANY ATTEMPT AT 100 DIVIDED BY 9

24 = 9 WITH WRONG LABEL

39 = I DON'T KNOW.

Release #: RA20641

NAEP #: 5-C50003-429-23

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

1972-73 Content Area: C. Arithmetic Computation
1972-73 Objective: IV. Solving Mathematical Problems--Social, Technical, and Academic

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	09-05	06-36
1972-73 Package-Exercise:	09-09	06-23

Timing: (in seconds)		
Exercise Total Time	37	36

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	DC	FABC	HCTY	SMPL
AGE 13	P	21.4	16.1*	20.3	24.5	23.6	24.6*	18.1*	22.8	21.8	24.7	19.7
	SE	1.4	1.4	3.0	3.0	3.1	1.8	1.6	2.0	3.8	6.9	2.3
GRD 8	P	25.6	17.7*	26.1	31.0	26.1	30.5*	21.1*	26.7	26.3	27.9	24.1
	SE	2.0	2.6	4.8	4.1	3.4	2.6	2.0	2.9	4.7	7.1	3.4
AGE 17	P	52.1	39.7*	48.3	56.9	59.8*	58.1*	46.3*	44.5	58.7*	66.2*	50.5
	SE	2.1	2.9	4.9	3.7	4.1	2.4	2.7	4.5	3.9	5.3	2.5
GRD 11	P	56.4	45.7*	54.6	60.6	60.9	64.4*	49.8*	50.9	60.2	67.6*	55.4
	SE	2.2	3.0	5.4	3.8	4.6	2.5	3.0	5.2	3.9	4.4	2.9

A hockey team won five of the 20 games it played. What percent of the games did it win?

ANSWER ____________________

A20641-23
C50003-23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE
11 = 25% OR 25
20 = OTHER
21 = .25, 1/4 OR 5/20
22 = 4%, 4 OR .04
23 = 1/4% OR .25%
24 = 75%, 75, .75 OR 3/4
25 = 15% OR 15
39 = I DON'T KNOW.

Release #: 9A21032

NAEP #: 5-K52029-429-12

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

1972-73 Content Area: A. Number and Numeration Concepts
1972-73 Objective: III. Understand Mathematical Concepts and Processes

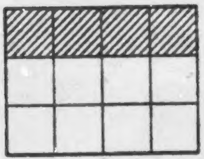
Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture

Overlap:	9	13
1977-78 Package-Exercise:	03-07	08-02
1972-73 Package-Exercise:	03-24	08-02

Timing: (in seconds)		
Exercise Total Time	29	25

Note: The administration times for this exercise in the 1972-73 assessment were: age 9 - 26 seconds and age 13 - 22 seconds.

What fractional part of this figure is shaded?



ANSWER ____________________

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 9	P	19.7	17.0	15.6	21.3	24.4	20.2	19.2	24.2	24.4	20.0	15.2*
	SE	1.9	2.2	2.5	3.9	5.5	2.0	2.1	4.0	4.9	4.1	2.1
GRD 4	P	22.7	18.4	17.4	26.5	27.4	24.3	21.3	29.1	26.5	22.5	18.1*
	SE	2.3	2.6	3.2	5.4	5.9	2.4	2.7	5.3	5.3	4.2	2.6
AGE 13	P	81.7	78.9*	81.8	85.4*	87.6*	80.7	82.7	77.2	88.2*	89.1*	79.7
	SE	1.1	3.4	2.3	2.0	1.2	1.3	1.6	3.2	1.9	2.1	2.2
GRD 8	P	86.8	77.1*	86.7	91.0*	90.5*	86.3	87.2	84.0	90.4	91.3	85.3
	SE	1.1	3.6	2.4	1.6	1.6	1.5	1.5	2.3	1.9	2.3	2.1

A21032-12
K52029-12

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 1/3 OR 4/12

12 = .33, 33% OR 33 1/3%

20 = OTHER

21 = .25, 25% OR 1/4

22 = 4 OR TOP 4

23 = 4/8

24 = TOP OR TOP PART (NOT USED AT AGE 13)

39 = I DON'T KNOW.

Release #: RA21232

NAEP #: S-K30006-429-12

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

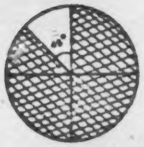
1972-73 Content Area: K. Geometry
1972-73 Objective: III. Understand Mathematical Concepts and Processes

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture

Overlap:	9	13
1977-78 Package-Exercise:	05-09	09-04
1972-73 Package-Exercise:	07-29	09-07

Timing: (in seconds)		
Exercise Total Time	46	36

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 9	P	2.3	1.7	2.1	2.8	2.5	2.8	1.8	1.8	3.4	4.1	1.6
	SE	0.4	0.6	0.6	1.0	1.0	0.5	0.5	0.6	0.9	2.0	0.4
GRD 4	P	2.9	2.0	3.0	3.6	2.8	3.8*	2.0*	2.3	4.1	5.2	2.0*
	SE	0.5	0.5	0.8	1.3	1.1	0.7	0.6	0.8	1.2	2.6	0.5
AGE 13	P	21.3	15.3*	17.9	27.0*	23.2	23.2	19.3	23.3	23.8	23.9	18.4
	SE	1.3	1.9	2.5	2.7	2.7	1.8	1.8	3.2	3.4	4.2	1.7
GRD 8	P	24.5	17.3*	22.8	30.3*	25.5	27.4	21.7	27.9	25.1	27.3	21.3
	SE	1.5	2.0	3.4	2.8	2.9	2.3	2.1	3.8	3.5	4.8	1.8



Look at the circle above. What fractional part of the circle is shaded?

ANSWER ______________________

A21232-12
K30006-12

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 7/8, $\frac{3\ 1/2}{4}$, "ALL BUT 1/8"

12 = 87 1/2% OR .875

20 = OTHER

21 = 1/8 OR 1/2 OF 1/4

22 = 1/4

23 = 3 1/2 OR 3 1/2 PARTS

24 = 4/5, 80% OR 4 PARTS

25 = 315°

39 = I DON'T KNOW.

Release #: RA21341

NAEP #: 5-C20006-429-123

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

1972-73 Content Area: C. Arithmetic Computation
1972-73 Objective: II. Perform Mathematical Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlaps:	9	13	17
1977-78 Package-Exercise:	02-30	02-03	05-04
1972-73 Package-Exercise:	02-21	02-10	05-12

Timing: (in seconds)			
Exercise Total Time	31	31	31

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	13.0	10.3	11.6	14.6	15.2	14.9*	11.1*	11.1	16.0*	7.9	13.3
	SE	1.0	2.1	2.4	1.9	1.9	1.3	1.5	2.0	1.9	3.1	1.2
GRD 4	P	14.2	11.7	12.3	16.3	16.2	17.4*	11.3*	13.3	16.6	8.5	14.4
	SE	1.1	2.5	2.1	2.6	1.9	1.7	1.6	2.5	1.9	3.7	1.6
AGE 13	P	49.5	38.4*	48.4	52.5	57.7	55.9*	42.7*	44.0	56.9*	51.3	48.1
	SE	2.1	2.3	4.1	3.4	5.8	2.3	2.7	3.9	3.3	6.6	3.5
GRD 8	P	55.8	45.2*	54.8	59.7	61.8	64.6*	47.4*	48.6	61.2	61.9	54.9
	SE	2.6	3.0	4.4	4.4	6.2	2.7	3.2	4.0	3.4	6.0	4.3
AGE 17	P	73.3	63.4*	71.6	77.1	73.1	77.6*	69.1*	69.6	78.5	78.7	71.9
	SE	1.8	4.3	3.2	3.5	2.9	1.8	2.2	4.5	3.7	4.5	2.2
GRD 11	P	76.7	66.2*	76.1	79.6	82.8	82.9*	71.4*	72.7	81.4	85.9*	75.1
	SE	1.8	3.8	3.0	3.3	3.5	1.6	2.5	4.2	3.4	4.1	2.4

What does $\frac{2}{3}$ of 9 equal?

ANSWER ______________________

A21341-123
C20006-123

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 6, 18/3 OR 6/1

20 = OTHER

21 = 9 2/3 OR 8 1/3

22 = 3 OR 1/3

23 = 18/27, 2/3, 6/9 OR ATTEMPTED $\frac{2 \times 9}{3 \times 9}$

24 = 27/2, 13 1/2, 9 X 3/2, 9 DIVIDED BY 2/3 OR ATTEMPTED $\frac{3 \times 9}{2}$

25 = 2/27, 2/3 X 1/9, 2/3 DIVIDED BY 9 OR ATTEMPTED $\frac{2}{3 \times 9}$

26 = 2/3 X 9 WITH NO OR WRONG ANSWER

29 = I DON'T KNOW.

Release #: RA25211

NAEP #: S-A21029-429-1

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 1A. Recall and Recognition

1972-73 Content Area: A. Number and Numeration Concepts
1972-73 Objective: II. Perform Mathematical Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	9
1977-78 Package-Exercise:	04-07
1972-73 Package-Exercise:	04-20

Timing: (in seconds)
Exercise Total Time 38

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A												
AGE 9	P	71.8	54.9*	66.4	79.7*	84.7*	70.0	73.7	66.6	81.6	75.3	69.1
	SE	2.0	3.9	4.7	3.2	2.0	2.4	2.2	3.0	4.7	6.8	3.7
GRD 4	P	79.5	62.0*	77.0	88.0*	89.3*	79.3	79.7	74.5	84.5	84.0	78.3
	SE	2.3	4.4	3.6	2.1	2.5	2.5	2.3	2.4	5.4	6.6	3.6
PART B												
AGE 9	P	68.4	49.6*	63.3	76.1*	83.4*	66.5	70.4	64.0	79.7*	70.7	64.9
	SE	2.1	4.1	3.7	4.0	3.3	2.6	2.6	3.1	5.4	7.1	3.5
GRD 4	P	75.6	55.7*	73.1	83.9*	87.9*	75.2	76.0	70.4	83.2	78.4	73.6
	SE	2.1	4.1	3.8	2.7	3.1	2.4	2.6	2.8	5.5	7.7	3.4

A. Write two EVEN numbers.

(1)____________________

(2)____________________

B. Write two ODD numbers.

(1)____________________

(2)____________________

A25211-1
A21029-1
PARTS A&B

SCORING GUIDE: PARTS A & B

Categories are listed below.

PART A:

00 = NO RESPONSE
11 = ANY TWO EVEN NUMBERS
20 = OTHER
21 = ONE EVEN NUMBER AND ONE ODD NUMBER
22 = ANY TWO ODD NUMBERS
23 = ONLY ONE NUMBER GIVEN AND IT IS ODD
24 = ONLY ONE NUMBER GIVEN AND IT IS EVEN
39 = I DON'T KNOW.

PART B:

00 = NO RESPONSE
11 = ANY TWO ODD NUMBERS
20 = OTHER
21 = ONE EVEN NUMBER AND ONE ODD NUMBER
22 = ANY TWO EVEN NUMBERS
23 = ONLY ONE NUMBER GIVEN AND IT IS EVEN
24 = ONLY ONE NUMBER GIVEN AND IT IS ODD
39 = I DON'T KNOW.

Release #: RA30221

NAEP #: 5-C10009-429-123

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

1972-73 Content Area: C. Arithmetic Computation
1972-73 Objective: II. Perform Mathematical Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	9	13	17
1977-78 Package-Exercise:	04-06	09-02	10-37
1972-73 Package-Exercise:	04-18	09-01	10-15

Timing: (in seconds)			
Exercise Total Time	33	33	32

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	50.2	46.9	47.3	50.3	56.9*	44.1*	56.6*	44.3*	58.1*	46.4	50.3
	SE	1.5	4.1	1.8	2.8	3.0	2.3	1.7	2.8	2.6	5.2	2.6
GRD 4	P	58.9	54.4	55.3	62.7	62.4	54.2*	63.2*	51.0*	65.2*	58.4	59.3
	SE	1.7	3.9	2.5	3.4	3.3	2.6	1.9	3.5	3.0	6.0	2.7
AGE 13	P	84.0	81.7	81.9	85.2	86.7	82.5*	85.6*	80.3*	87.2	85.8	84.5
	SE	1.1	2.1	1.0	2.1	2.7	1.2	1.4	2.3	2.1	2.3	1.5
GRD 8	P	87.3	86.1	87.1	85.3	90.4	86.9	87.7	88.1	88.2	90.3	88.2
	SE	1.1	2.2	1.5	2.4	2.0	1.2	1.4	2.7	1.8	2.3	1.4
AGE 17	P	91.6	93.0	90.7	91.7	90.9	90.6	92.5	91.9	89.4	96.9*	91.5
	SE	0.8	1.3	1.6	1.8	1.6	1.2	1.2	1.4	2.4	1.3	1.0
GRD 11	P	92.2	92.2	92.2	92.6	91.5	90.9	93.3	93.0	89.2	96.4*	92.7
	SE	1.1	1.7	2.0	2.3	2.3	1.6	1.3	1.5	3.0	1.7	1.3

Do the following addition:

$$\begin{array}{r} 43 \\ 71 \\ 75 \\ \underline{92} \end{array}$$

ANSWER ____________

A30221-123
C10009-123

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 281

20 = OTHER

21 = 2711

22 = 271

39 = I DON'T KNOW.

Release #: RA30421

NAEP #: 5-C10006-429-12

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

1972-73 Content Area: C. Arithmetic Computation
1972-73 Objective: II. Perform Mathematical Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	9	13
1977-78 Package-Exercise:	03-03	05-38
1972-73 Package-Exercise:	03-02	05-18

Timing: (in seconds)		
Exercise Total Time	29	25

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	76.2	73.0	68.2*	80.4	82.0*	73.5	78.8	71.5	82.1*	77.1	75.2
	SE	1.0	2.9	3.0	2.[illegible]	2.9	2.0	1.9	3.1	2.9	2.1	1.8
GRD 4	P	79.9	78.0	70.8*	85.1*	84.2	77.9	81.7	76.1	8[illegible].8*	85.2	77.8
	SE	1.6	3.3	4.0	2.5	2.7	2.2	1.8	3.3	2.8	3.7	2.2
AGE 13	P	82.5	79.4	81.8	81.1	87.8*	80.2*	84.8*	78.5	82.8	89.1*	83.1
	SE	1.1	1.9	2.5	2.1	1.5	1.6	1.2	2.8	1.8	3.1	1.6
GRD 8	P	86.8	85.5	84.5	86.9	89.8	86.0	87.5	83.8	87.7	94.3*	86.3
	SE	1.1	2.5	2.3	2.1	1.9	1.5	1.3	2.5	1.6	2.8	1.7

What is the sum of 21 and 54?

ANSWER ____________________

A30421-12
C10006-12

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 75

20 = OTHER

21 = 33 OR ATTEMPTED 54 - 21

22 = 66

23 = 1134 OR ATTEMPTED 54 X 21

39 = I DON'T KNOW.

Release #: DA30932

NAEP #: S-B12015-429-12

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

1972-73 Content Area: B. Properties of Numbers and Operations
1972-73 Objective: V. Using Mathematics and Mathematical Reasoning to Analyze Problem Situations, Define Problems, Formulate Hypotheses, Make Decisions, and Verify Results

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	9	13
1977-78 Package-Exercise:	01-38	01-43
1972-73 Package-Exercise:	01-28	01-30

Timing: (in seconds)		
Exercise Total Time	41	32

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PADC	ACTI	SHPL
AGE 9	P	48.8	46.2	39.3*	49.0	60.5*	48.8	48.7	43.6	58.7*	51.3	46.2
	SE	1.7	2.1	3.6	3.4	4.0	2.0	2.0	3.7	2.9	4.5	2.8
GRD 4	P	55.6	53.1	45.8*	57.2	64.1*	57.3	53.5	49.3	65.3*	57.5	53.7
	SE	1.7	1.9	4.2	3.0	3.9	2.3	2.2	3.8	3.3	6.7	2.6
AGE 13	P	75.3	67.8*	75.2	76.4	81.5*	76.9	74.6	71.3	83.7*	85.1*	70.8
	SE	1.8	2.5	2.6	5.1	2.3	2.2	1.8	3.2	2.2	3.4	3.3
GRD 8	P	80.4	74.1*	79.8	80.4	86.0*	81.6	79.2	77.8	87.1*	88.6*	75.4
	SE	1.9	2.3	3.1	5.8	1.8	2.4	1.9	3.7	2.0	2.5	3.8

149 + 327 is how much GREATER than 149 + 320?

ANSWER ______________________

A30932-12
B12015-12

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 7

20 = OTHER

39 = I DON'T KNOW.

Release #: PA33621

NAEP #: 5-C10019-829-123

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

1972-73 Content Area: C. Arithmetic Computation
1972-73 Objective: II. Perform Mathematical Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	9	13	17
1977-78 Package-Exercise:	03-08	01-39	01-32
1972-73 Package-Exercise:	03-26	01-01	01-01

Timing: (in seconds)			
Exercise Total Time	35	31	31

Subtract 237 from 504.

ANSWER ____________________

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SUBL
AGE 9	P	27.9	21.9*	23.1	32.1	33.3	27.6	28.2	25.4	33.1	26.9	26.7
	SE	1.5	2.3	3.2	3.0	3.4	1.5	2.0	3.3	3.4	3.3	2.1
GRD 4	P	33.9	27.3*	27.8	44.1*	34.6	34.1	33.8	31.8	38.2	37.1	32.3
	SE	1.9	2.7	4.2	4.0	3.7	2.0	2.5	3.7	3.5	3.9	2.7
AGE 13	P	73.4	68.6*	67.9*	77.2	79.4*	74.1	72.7	70.2	77.2	82.4*	71.1
	SE	1.4	2.0	2.1	3.7	2.1	1.6	1.7	3.5	1.5	4.0	2.2
GRD 8	P	77.0	74.4	70.4*	80.9	81.7*	78.2	75.9	76.3	76.4	84.1	76.1
	SE	1.2	2.8	2.3	2.7	1.9	1.5	1.7	3.4	1.9	3.8	2.4
AGE 17	P	84.3	82.2	83.5	86.4	84.2	83.8	84.7	81.3	83.6	92.6*	84.7
	SE	1.2	3.6	2.4	1.2	2.6	1.5	1.5	2.3	2.4	2.6	1.8
GRD 11	P	85.0	82.4	83.3	86.2	87.6	83.7	86.0	81.8	83.4	90.9*	86.3
	SE	1.1	2.5	2.9	1.3	2.2	1.9	1.6	2.4	2.6	2.4	1.7

A33621-123
C10019-123

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 267

20 = OTHER

21 = 277 OR 367

22 = 333, -333, 33, -33, 733 OR -733

23 = 377

24 = 741, 7311 OR ATTEMPTED 237 + 504

25 = 167

39 = I DON'T KNOW.

Release #: MA40321

NAEP #: 5-C10032-429-123

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

1972-73 Content Area: C. Arithmetic Computation
1972-73 Objective: II. Perform Mathematical Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	9	13	17
1977-78 Package-Exercise:	02-36	02-04	05-06
1972-73 Package-Exercise:	05-18	02-13	05-21
Timing: (in seconds)			
Exercise Total Time	46	47	45

Multiply the following numbers:

671
X402

ANSWER ______________________

A40321-123
C10032-123

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 9	P	3.2	1.6*	2.2	4.2	4.7	2.5*	4.0*	3.8	5.6*	3.2	1.5*
	SE	0.5	0.5	0.8	1.0	1.5	0.5	0.6	0.9	1.1	1.3	0.5
GRD 4	P	4.0	2.1*	3.0	5.7	5.0	3.1	4.8	4.9	6.5	4.4	2.0*
	SE	0.7	0.6	1.1	1.7	1.8	0.8	0.8	1.4	1.6	1.9	0.7
AGE 13	P	65.8	57.6*	65.0	67.2	73.2*	63.7	68.1	60.7*	71.5*	67.8	65.1
	SE	1.3	3.1	3.0	2.1	1.7	1.8	1.7	2.4	2.2	5.6	2.3
GRD 8	P	72.0	65.2*	70.3	75.5	75.5	70.9	73.1	70.6	75.5	76.9	69.6
	SE	1.1	2.4	2.6	1.9	2.0	1.8	1.6	2.2	2.4	4.6	1.9
AGE 17	P	76.5	77.5	75.1	76.1	77.6	75.3	77.6	72.0*	76.0	75.7	79.3*
	SE	1.4	2.1	3.0	2.5	3.0	1.7	1.8	2.4	2.7	5.7	1.5
GRD 11	P	78.9	79.9	78.1	78.8	79.2	77.9	79.8	75.2	78.0	81.9	80.8
	SE	1.5	2.6	3.1	2.8	2.8	2.0	2.0	2.9	2.9	6.1	1.5

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 269,742 OR 269742

12 = COMMAS MISPLACED, BUT NUMBER CORRECT

20 = OTHER

21 = 2472 OR 2402

22 = 4026 OR 28182

23 = 269,642 OR 249,742

24 = 1073, 269 OR ATTEMPTED 671 + 402 OR 671 - 402

25 = MULTIPLIED CORRECTLY, BUT MADE AN ERROR IN ADDITION

39 = I DON'T KNOW.

Release #: RA40421

NAEP #: S-C10026-429-1

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

1972-73 Content Area: C. Arithmetic Computation
1972-73 Objective: II. Perform Mathematical Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 05-03
1972-73 Package-Exercise: 07-01

Timing: (in seconds)
Exercise Total Time 22

Multiply:

$$\begin{array}{r} 48 \\ \underline{\times 4} \end{array}$$

ANSWER ____________________

A40421-1
C10026-1

				REGION				SEX		COMMUNITY SIZE (DOC)			
			NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE	9	P	37.8	32.4	36.2	34.8	47.7*	32.5*	43.2*	35.3	44.5*	41.3	34.6
		SE	1.7	3.1	2.3	3.8	3.9	2.1	2.4	4.1	3.8	6.7	2.2
GRD	4	P	48.3	42.8	48.6	45.9	54.6	43.1*	53.2*	44.3	55.1	49.7	45.8
		SE	2.2	3.2	4.0	5.3	4.3	2.8	2.8	4.7	4.4	8.4	2.8

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 192

20 = OTHER

21 = 1632

22 = 52

23 = 44

24 = 12

25 = 484 OR 488

39 = I DON'T KNOW.

Release #: N043321

NAEP #: S-A22010-A29-2

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 2A. Computations or Counting

1972-73 Content Area: C. Arithmetic Computation
1972-73 Objective: II. Perform Mathematical Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	13
1977-78 Package-Exercise:	06-02
1972-73 Package-Exercise:	06-05

Timing: (in seconds)
Exercise Total Time 44

$3(-3) + 4 =$

ANSWER ______________________

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 13	P	15.3	13.1	13.6	14.5	20.0	15.7	14.8	11.4	22.2*	10.8	14.5
	SE	1.4	3.4	3.1	2.3	2.9	1.7	1.0	3.3	3.1	2.4	2.5
GRD 8	P	19.6	17.3	17.1	19.9	23.4	20.8	18.5	13.0*	26.2*	16.5	19.6
	SE	1.7	4.3	3.1	3.2	2.9	2.1	2.1	3.1	3.6	2.8	3.0

A43321-2
A22010-2

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = -5

20 = OTHER

21 = 3 OR -3

22 = 4 OR -4

23 = 5

24 = 7 OR -7

25 = 13 OR -13

39 = I DON'T KNOW.

Release #: RA45911

NAEP #: S-F30021-429-3

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 1A. Recall and Recognition

1972-73 Content Area: F. Exponents and Logarithms
1972-73 Objective: II. Perform Mathematical Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 14-08
1972-73 Package-Exercise: 08-11

Timing: (in seconds)
Exercise Total Time 24

$(3)^{-2}$ =

ANSWER ____________________

		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
			REGION				SEX		COMMUNITY SIZE (DOC)			
AGE 17	P	17.0	12.9	13.3	16.4	24.6*	17.3	16.7	17.6	21.9	24.3	12.9*
	SE	1.4	2.1	1.8	2.1	4.0	1.6	1.7	2.6	4.1	9.9	1.4
GRD 11	P	17.8	14.8	14.3	17.1	24.7	18.6	17.2	19.3	20.7	29.7	13.9*
	SE	1.4	2.4	1.5	2.2	4.3	1.8	1.8	2.9	3.7	12.4	1.4

A45911-3
F30021-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 1/9

12 = $\frac{1}{(3)\ (3)}$, $\frac{1}{3^2}$, $\frac{1}{3}\left(\frac{1}{3}\right)$ OR $\left(\frac{1}{3}\right)^2$

13 = $.\overline{111}$

20 = OTHER

21 = 1

22 = -6

23 = 6

24 = -9

25 = 9

26 = .03

27 = .09

28 = $\frac{1}{\sqrt{3}}$, $\frac{\sqrt{3}}{3}$, $\frac{1.732}{3}$, .577,
$\frac{1}{(3)^{1/2}}$, $\sqrt{3}$, 1.732 OR 3 1/2

39 = I DON'T KNOW.

Release #: NA46642

NATP #: 5-C50032-429-3

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

1972-73 Content Area: C. Arithmetic Computation
1972-73 Objective: IV. Solving Mathematical Problems--Social, Technical, and Academic

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	17
1977-78 Package-Exercise:	05-08
1972-73 Package-Exercise:	05-28

Timing: (in seconds)
Exercise Total Time 46

A trucking company estimates that one of its trucks depreciates at the rate of 25 percent of its original cost each year. If a truck cost originally $6,200, the value of the truck at the end of one year is

ANSWER ____________________

			REGION				SEX		COMMUNITY SIZE (DOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MDCT	SMPL
AGE 17 P	25.3	22.1	19.7*	29.6	27.9	30.7*	20.2*	24.1	30.9	21.9	24.2
SE	1.6	2.8	2.7	3.5	2.9	2.1	1.7	2.9	4.5	4.9	1.9
GRD 11 P	27.1	23.3	20.9	32.4	28.8	34.8*	20.4*	24.9	30.7	24.9	26.8
SE	2.0	3.1	3.6	4.0	3.7	2.6	2.0	3.7	5.2	4.7	2.1

A46642-3
C50032-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = $4650

12 = 4650

20 = OTHER

21 = 1550 OR OTHER DECIMAL PLACEMENT OF ATTEMPTED 6200 X .25, $\frac{6200}{4}$ OR 6200 X 25

22 = 24800 OR OTHER DECIMAL PLACEMENT OF ATTEMPTED 6200 X 4, $\frac{6200}{.25}$ OR $\frac{6200}{25}$ AND MAY ALSO SUBTRACT THE RESULT FROM 6200

23 = 7750 OR OTHER DECIMAL PLACEMENT OF ATTEMPTED 6200 + (.25 X 6200) OR 6200 + (25 X 6200)

24 = 3100 OR OTHER DECIMAL PLACEMENT OF ATTEMPTED 6200 X .5 OR 620
DIVIDED BY 2 AND MAY ALSO SUBTRACT THE RESULT FROM 6200

25 = ATTEMPTED 6200 - (.25 X 6200), 6200 X .75, 6200 - $\frac{6200}{4}$, 6200 - (25 X 6200) OR 6200 X 75

Release #: RA47501

NAEP #: 5-C20033-429-3

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

1972-73 Content Area: E. Estimation and Measurement
1972-73 Objective: IV. Solving Mathematical Problems--Social, Technical, and Academic

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	17
1977-78 Package-Exercise:	08-34
1972-73 Package-Exercise:	08-23

Timing: (in seconds)	
Exercise Total Time	43

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 17	P	13.3	7.1*	11.3	15.9	16.8	13.8	12.8	8.4*	19.7*	17.5	11.6
	SE	1.1	1.5	1.5	2.3	2.7	1.3	1.4	2.1	2.0	6.6	1.4
GRD 11	P	15.0	8.1*	13.5	17.7	18.5	16.8	13.5	10.2	20.4*	21.2	13.4
	SE	1.2	1.5	1.7	2.4	3.0	1.8	1.4	2.7	2.2	8.0	1.4

A recipe for punch calls for $3\frac{3}{4}$ cups of pineapple juice for 10 people. How much pineapple juice should be used to make the same punch to serve five people?

ANSWER ______________________

A47501-3
C20033-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 1 7/8 CUPS OR 15/8 CUPS

12 = 1.875 CUPS, 1.8 CUPS, OR 1.9 CUPS

13 = EQUIVALENT TO 1 7/8 CUPS USING ANOTHER UNIT SUCH AS 15 OZ., 15/16 PINTS OR 15/32 QUARTS

20 = OTHER

21 = ATTEMPTED 3 3/4 DIVIDED BY 2, 3 3/4 X 1/2 OR EQUIVALENT

22 = ANY NUMBER BETWEEN 1 1/2 AND 2 NOT IN CATEGORIES 11, 12, 13, 21 OR 26

23 = 2 1/4 OR ATTEMPTED 3 3/4 - 1 1/2

24 = 7 1/2, 7.5 OR ATTEMPTED 2 X (3 3/4)

25 = 3/4, .75, 18 3/4, 18.75 OR ATTEMPTED 3 3/4 DIVIDED BY 5, 3 3/4 X 1/5 OR 3 3/4 X 5

26 = 1 7/8, 15/8, 1.875, 1.8 OR 1.9 WITH NO OR WRONG UNITS

39 = I DON'T KNOW.

Release #: MA51032

NAEP #: 5-B22001-429-123

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

1972-73 Content Area: B. Properties of Numbers and Operations
1972-73 Objective: IV. Solving Mathematical Problems--Social, Technical, and Academic

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	9	13	17
1977-78 Package-Exercise:	03-09	04-33	08-36
1972-73 Package-Exercise:	03-32	04-12	08-28
Timing: (in seconds) Exercise Total Time	166	106	105

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	0.3	0.0	0.0	0.8	0.1	0.3	0.2	0.4	0.4	0.3	0.2
	SE	0.1	0.0	0.0	0.8	0.1	0.2	0.2	0.3	0.4	0.0	0.2
GRD 4	P	0.2	0.0	0.0	0.5	0.2	0.4	0.0	0.2	0.6	0.0	0.0
	SE	0.1	0.0	0.0	0.5	0.2	0.3	0.0	0.2	0.6	0.0	0.0
AGE 13	P	1.9	1.6	1.8	2.8	1.4	3.3*	0.4*	2.0	2.0	2.5	1.6
	SE	0.4	0.8	0.7	0.8	0.5	0.7	0.2	1.0	0.8	1.4	0.4
GRD 8	P	2.3	2.1	2.0	3.7	1.4	4.5*	0.4*	2.8	2.1	2.4	2.2
	SE	0.5	1.1	0.9	1.1	0.6	1.0	0.2	1.3	0.8	1.7	0.6
AGE 17	P	11.8	6.6*	9.7	12.5	17.3*	14.8*	8.9*	12.0	12.9	12.7	10.9
	SE	0.9	1.3	2.1	1.4	2.3	1.4	1.0	2.3	2.0	4.3	1.0
GRD 11	P	13.8	8.3*	11.4	13.9	20.7*	18.9*	9.3*	14.4	13.9	18.1	12.6
	SE	1.1	1.8	2.8	1.6	2.7	1.8	1.2	2.8	2.8	4.8	1.2

Arrange the following fractions from the **SMALLEST** to the **LARGEST**.

$$\frac{5}{8},\ \frac{3}{10},\ \frac{3}{5},\ \frac{1}{4},\ \frac{2}{3},\ \frac{1}{2}$$

Smallest Fraction ___ ___ ___ ___ ___ ___ Largest Fraction

A51032-123
B22001-123

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 1/4, 3/10, 1/2, 3/5, 5/8, 2/3

20 = OTHER, ONE OR MORE NUMBERS MISSING OR COPIED WRONG

21 = DESCENDING DENOMINATORS
3/10, 5/8, 3/5, 1/4, 2/3, 1/2

22 = ASCENDING DENOMINATORS
1/2, 2/3, 1/4, 3/5, 5/8, 3/10

23 = 3/10 FIRST + ANY ARRANGEMENT OF ALL FRACTIONS OTHER THAN CATEGORY 21 OR 24

24 = RIGHT ORDER (CATEGORY 11) BUT ANY TWO CONSECUTIVE FRACTIONS OUT OF SEQUENCE

25 = DESCENDING NUMERATORS
5/8, 3/10, 3/5, 2/3, 1/2, 1/4;
5/8, 3/5, 3/10, 2/3, 1/4, 1/2;
5/8, 3/10, 3/5, 2/3, 1/4, 1/2 OR
5/8, 3/5, 3/10, 2/3, 1/2, 1/4

26 = ASCENDING NUMERATORS
1/4, 1/2, 2/3, 3/10, 3/5, 5/8;
1/2, 1/4, 2/3, 3/5, 3/10, 5/8;
1/2, 1/4, 2/3, 3/10, 3/5, 5/8 OR
1/4, 1/2, 2/3, 3/5, 3/10, 5/8

39 = I DON'T KNOW.

Release #: RA60132

NAEP #: 5-B12012-429-1

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 3B. Understanding

1972-73 Content Area: B. Properties of Numbers and Operations
1972-73 Objective: III. Understand Mathematical Concepts and Processes

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 04-05
1972-73 Package-Exercise: 04-15

Timing: (in seconds)
Exercise Total Time 25

				REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 9	P	69.5	68.2	65.4	66.2	79.7*	68.7	70.4	64.6*	74.4	65.4	70.4
	SE	1.4	2.5	4.0	1.9	2.1	2.1	2.1	2.4	3.6	5.8	2.1
GRD 4	P	73.4	70.8	68.9	72.0	81.6*	74.3	72.5	68.1	75.4	67.6	76.0
	SE	1.6	2.3	4.6	2.7	2.6	1.9	2.3	3.7	4.1	6.8	2.0

a and b stand for two whole numbers. If a X b = 24, then

b X a =

ANSWER______________________

A60132-
B12012-

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 24

20 = OTHER

21 = 48

22 = a X b

23 = b X a

24 = ab OR ba

39 = I DON'T KNOW.

Release #: RA70243

NAEP #: 5-C10041-429-12

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4B. Non-routine Problems

1972-73 Content Area: E. Logic
1972-73 Objective: V. Using Mathematics and Mathematical Reasoning to Analyze Problem Situations, Define Problems, Formulate Hypotheses, Make Decisions, and Verify Results

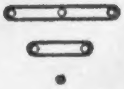
Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture

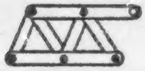
Overlap:	9	13
1977-78 Package-Exercise:	05-05	08-06
1972-73 Package-Exercise:	07-05	08-12

Timing: (in seconds)		
Exercise Total Time	100	72

Mike's building set has

60 long pieces
60 short pieces
and 60 nuts with bolts



How many of these  can he make?

ANSWER ____________________

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 9	P	3.1	2.6	2.8	2.7	4.2	3.3	2.8	0.9*	3.2	4.1	3.6
	SE	0.4	0.7	0.6	0.9	1.1	0.6	0.7	0.5	1.0	1.4	0.7
GRD 4	P	3.1	2.9	3.9	3.3	4.0	3.1	3.2	1.2*	3.2	3.9	3.6
	SE	0.5	0.6	0.7	1.3	1.1	0.5	0.9	0.7	1.1	1.3	0.9
AGE 13	P	24.1	19.6	27.6	26.1	22.8	26.4*	21.7*	22.8	30.0*	24.0	22.0
	SE	1.2	3.8	2.8	2.0	1.9	1.6	1.5	2.7	3.2	2.6	1.9
GRD 8	P	28.1	25.2	31.6	31.3	24.2	31.8*	24.7*	28.3	30.4	27.4	26.8
	SE	1.5	4.9	2.9	2.2	2.2	1.9	1.7	3.4	3.6	3.4	2.2

A70243-12
C10041-12

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 12

20 = OTHER

21 = 12 - 15 - 30; WORK DONE, BUT NO ANSWER CHOSEN

22 = 15

20 = 30

24 = 1

25 = 10

26 = 60

27 = 180

39 = I DON'T KNOW.

Release #: RA00044

NAEP #: 5-C30012-029-3

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

1972-73 Content Area: F. Business and Consumer Mathematics
1972-73 Objective: IV. Solving Mathematical Problems--Social, Technical, and Academic

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	17
1977-78 Package-Exercise:	01-40
1972-73 Package-Exercise:	01-28

Timing: (in seconds)
Exercise Total Time 63

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PARC	MCTY	SBPL
AGE 17	P	17.9	14.0	16.3	19.2	21.8	21.7*	14.3*	17.6	21.7	20.2	16.1
	SE	1.1	2.1	1.8	1.5	3.3	2.0	1.2	2.7	2.5	5.1	1.3
GRD 11	P	19.0	15.8	17.6	19.8	22.5	23.3*	15.3*	18.6	21.0	25.5	17.2
	SE	1.1	2.2	2.2	1.6	3.2	2.2	1.4	3.1	2.6	4.7	1.4

House A has 2,200 square feet of floor space and sells for $22,000. House B has 2,000 square feet of floor space and sells for $25,000. How much MORE does one square foot of floor space in House B cost than the same space in House A?

ANSWER ______________________

A00044-3
C30012-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = $2.50 OR 2.50

20 = OTHER

21 = $12.50, 12.50 OR ANY DECIMAL PLACEMENT OR ATTEMPTED 25,000 DIVIDED BY 2000

22 = $3000, 3000, OR ATTEMPTED 25,000 - 22,000

23 = $15, 15 OR ANY DECIMAL PLACEMENT OR ATTEMPTED (25,000 - 22,000) DIVIDED BY (2200 - 2000)

24 = 250 OR ANY DECIMAL PLACEMENT EXCEPT CATEGORIES 11, 25 AND 26

25 = 2.50 WITH WRONG UNITS

26 = ATTEMPTED (25,000 DIVIDED BY 2000) - (22,000 DIVIDED BY 2200) WITH NO OR WRONG ANSWER

39 = I DON'T KNOW.

Release #: RA94644

NAEP #: 5-C30011-429-3

1977-78 Content Area: A. Numbers and Numeration
1977-78 Objective: 4A. Routine Problems

1972-73 Content Area: P. Business and Consumer Mathematics
1972-73 Objective: IV. Solving Mathematical Problems--Social, Technical, and Academic

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Table

Overlap: 17
1977-78 Package-Exercise: 08-33
1972-73 Package-Exercise: 08-20

Timing: (in seconds)
Exercise Total Time 58

Note: The administration time for this exercise in the 1972-73 assessment was 54 seconds.

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17	P	5.2	3.1*	5.0	5.8	6.1	7.3*	3.1*	5.4	6.6	7.3	3.8*
	SE	0.5	0.8	1.2	1.0	1.3	0.8	0.6	1.2	1.5	1.8	0.6
GRD 11	P	5.0	3.9	5.2	5.8	4.6	7.9*	2.5*	5.3	5.6	8.7	3.8
	SE	0.7	1.0	1.3	1.5	1.1	1.2	0.5	1.2	1.7	2.7	0.7

A bill for electricity contains the following information:

Present Reading	Previous Reading	Consumed	Bill
1548 kw-hr	942 kw-hr	606 kw-hr	$9.09

How much is the customer paying per kilowatt hour for electricity?

ANSWER ____________________

A94644-3
C30011-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = $.015, 1.5¢ OR 1 1/2 CENTS

20 = OTHER

21 = ANY DECIMAL PLACEMENT OF .666..., .66, .67 WITH OR WITHOUT UNITS OR ATTEMPTED $9.09\overline{)606}$

22 = 303 OR ANY DECIMAL PLACEMENT WITH OR WITHOUT UNITS, OR ATTEMPTED 909 - 606

23 = ANY DECIMAL PLACEMENT OF 3

24 = 15 OR ANY DECIMAL PLACEMENT EXCEPT CATEGORIES 11 AND 25 OR ATTEMPTED $606\overline{)9.09}$

25 = .015, 1.5 OR 1 1/2 WITH NO OR WRONG UNITS

39 = I DON'T KNOW.

Release #: RB10111

NAEP #: S-B11005-429-1

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 1A. Recall and Recognition

1972-73 Content Area: B. Properties of Numbers and Operations
1972-73 Objective: III. Understand Mathematical Concepts and Processes

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:	9
1977-78 Package-Exercise:	04-10
1972-73 Package-Exercise:	04-30

Timing: (in seconds)
Exercise Total Time 37

Which one of the following is TRUE?

● 3 > 2

○ 3 = 2

○ 3 < 2

○ I don't know.

				REGION			SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 9	P	72.7	64.2*	68.6	77.6*	79.3*	72.6	72.8	66.0*	70.6*	80.8	71.4
	SE	1.6	3.6	3.3	2.1	3.6	2.1	1.9	2.4	2.7	5.8	2.4
GRD 4	P	75.7	67.7*	70.0	81.8*	82.0*	76.5	74.9	70.0	78.2	86.4	74.8
	SE	1.8	3.6	3.6	2.3	3.4	2.2	2.0	3.4	2.8	6.0	2.3

Release #: R22225

NAEP #: S-N11015-429-3

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2E. Algebraic Manipulations

1972-73 Content Area: E. Equations and Inequalities
1972-73 Objective: II. Perform Mathematical Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 07-07
1972-73 Package-Exercise: 07-18

Timing: (in seconds)
Exercise Total Time 35

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 17	P	34.2	26.9*	30.6	34.5	44.2*	35.5	33.0	32.4	42.0*	38.2	30.4*
	SE	1.5	2.5	3.6	2.1	3.6	2.0	1.7	2.7	3.7	8.7	1.8
GRD 11	P	36.5	29.5*	33.8	36.9	45.2*	39.3	[illegible]	35.7	44.2*	37.0	32.8
	SE	1.4	3.1	3.7	2.0	3.2	2.1	1.8	2.9	4.2	8.2	1.8

What is the value of x that satisfies the equation below?

$$3x + 6 - 14 = x + 2$$

ANSWER ____________________

R22225-3
N11015-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 5

20 = OTHER

21 = GAVE 5 AND SOME OTHER NUMBER

22 = DID SOME PARTIAL MANIPULATION CORRECTLY, BUT MADE LATER ERRO
OR FAILED TO FINISH, SUCH AS:
$3X - 8 = X + 2$, $3X - X = 2 + 8$,
$3X - X + 6 - 14 - 2 = 0$ OR $2X - 10 = 0$

23 = 1 1/2, -1 1/2, 2 1/2, -2 1/2, 3 OR -3

24 = 2, 4, 6, 8, 10, -2, -4, -6, -8 OR -10

39 = I DON'T KNOW.

Release #: R823425

NAEP #: 5-N22005-429-3

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2E. Algebraic Manipulations

1972-73 Content Area: E. Equations and Inequalities
1972-73 Objective: II. Perform Mathematical Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	17
1977-78 Package-Exercise:	09-05
1972-73 Package-Exercise:	09-14

Timing: (in seconds)
Exercise Total Time 33

		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
			REGION				SEX		COMMUNITY SIZE (DOC)			
AGE 17	P	17.8	13.1*	13.4*	18.7	24.9*	17.5	18.0	15.8	21.9	24.0	14.6
	SE	1.4	1.8	1.9	2.6	3.7	1.7	1.8	3.7	2.8	5.4	1.4
GRD 11	P	19.8	16.3	14.9*	20.0	27.2*	19.8	19.8	16.0	24.1*	27.1	17.1
	SE	1.5	3.0	2.1	2.6	3.8	2.0	1.9	4.2	2.5	6.2	1.7

Find the solution set of $x^2 - 5x + 6 = 0$.

ANSWER ____________________

823425-3
N22005-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = {3, 2}; 3, 2; X = 2 OR 3 OR X = $\frac{5 + 1}{2}$ OR $\frac{5 - 1}{2}$

20 = OTHER

21 = X = -2,3; X = 2,-3 OR X = -2,-3

22 = GIVES ONLY ONE SOLUTION CORRECTLY EXCEPT CATEGORY 21 OR GIVES THE TWO CORRECT SOLUTIONS PLUS OTHER NUMBERS

23 = X - 3X - 2; OR (X - 2)(X - 3) AS FINAL ANSWER

24 = X = 1, -1, 6 OR -6

25 = $X^2 - 5X + 6 = 0$, $X^2 - 5X = \pm 6$ OR $X^2 = 5X - 6$

39 = I DON'T KNOW.

Release #: R024431

NAEP #: 5-G20002-429-23

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 3A. Translation

1972-73 Content Area: G. Algebraic Expressions
1972-73 Objective: III. Understand Mathematical Concepts and Processes

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	07-41	02-09
1972-73 Package-Exercise:	07-29	02-29

Timing: (in seconds)		
Exercise Total Time	46	48

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	DC	F"C	SCTY	SMPL
AGE 13	P	17.4	15.4	11.4*	21.3	21.8*	15.6	19.4	12.6	24.4*	24.9	15.4
	SE	1.1	2.0	1.6	2.9	1.8	1.3	1.9	2.6	2.8	5.1	2.1
GRD 8	P	20.6	19.6	14.1*	24.6	23.8	19.8	21.2	14.9	28.5*	29.9*	17.6
	SE	1.4	2.2	2.2	3.6	2.0	1.7	2.0	3.2	3.5	4.7	2.4
AGE 17	P	44.7	44.5	37.5*	48.7	47.3	45.4	[illegible]	36.8*	50.9	49.3	43.3
	SE	1.7	3.0	3.0	3.5	3.4	2.2	2.0	4.6	4.3	3.6	1.8
GRD 11	P	48.3	47.3	41.6*	52.9	50.1	50.4	46.5	40.4	55.5*	54.8	45.9
	SE	1.8	3.6	3.3	3.7	3.8	2.5	2.2	4.8	3.7	3.3	2.5

Carol earned D dollars during the week. She spent C dollars for clothes and F dollars for food. Write an expression using D, C, and F that shows the number of dollars she had left.

ANSWER ____________________

R24431-23
G20002-23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = D - (C + F), D - C - F OR X = D - (C + F)

20 = OTHER

21 = (C + F) - D OR C + F - D

22 = D - FC OR D - CF

23 = C + F + D

24 = D - C + F OR D - F + C

25 = USED EQUATION CORRECTLY USING NUMBERS AND GOT NUMERICAL ANSWER; E.G., 10 - 5 - 4 = 1

26 = EQUIVALENT TO D - C - F BUT NOT ONE ALGEBRAIC EXPRESSION AND NO NUMBERS GIVEN; E.G.,

```
 F  D      D      D      D - F = H
+C  -     -F     -F      H - C = X
    --     H
          -C     -C
           X
```

27 = USED EQUATION CORRECTLY, ASSIGNED NUMERICAL VALUES, GOT NUMERICAL ANSWER; E.G.,

```
D   C   F
10 - 5 - 4 = 1
```

39 = I DON'T KNOW.

Release #: B33625

NAEP #: 5-810003-429-23

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2B. Algebraic Manipulations

1972-73 Content Area: G. Algebraic Expressions
1972-73 Objective: II. Perform Mathematical Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	03-37	09-06
1972-73 Package-Exercise:	03-05	J9-16

Timing: (in seconds)		
Exercise Total Time	30	31

$$\frac{1}{3} \times \frac{a}{2} =$$

ANSWER________________________

B33625-23
810003-23

			REGION				SEX		COMMUNITY SIZE (DOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 13 P	10.2	11.8	7.0*	8.5	14.0*	8.9	11.6	13.1	13.5	15.4	6.0*
SE	3.8	1.8	1.3	1.2	1.7	1.0	1.1	2.3	1.8	4.3	0.7
GRD 8 P	13.1	14.3	9.8	11.5	16.3*	11.8	14.4	16.0	17.0	19.9	8.0*
SE	1.3	1.8	2.3	1.5	1.9	1.4	1.5	2.5	2.4	5.1	1.0
AGE 17 P	38.9	34.8	37.6	40.7	41.1	38.7	39.0	37.2	39.2	45.7	38.0
SE	1.5	2.9	2.6	2.3	4.1	1.9	1.9	3.5	3.4	3.6	1.8
GRD 11 P	42.5	43.1	40.3	43.5	45.3	42.9	42.2	41.7	43.1	51.0	40.7
SE	1.7	3.0	3.7	2.6	4.6	2.2	2.4	3.9	3.6	5.0	2.4

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = $\frac{a}{6}$ OR $\frac{1a}{6}$

20 = OTHER

21 = 1/6

22 = 1/5

23 = 1/3, 2/3, 2/6, 4/6 OR 1/2

24 = 3a/2, 2/3a, 2/3 X a, (3/2)a OR 3/2a

25 = 1

26 = $\frac{1 \text{ X } a}{3 \text{ X } 2}$ OR $\frac{a}{3 \text{ X } 2}$

27 = $\frac{a}{2}$ X $\frac{1}{3}$ (EXACT RESPONSE, IN THAT ORDER)

39 = I DON'T KNOW.

Release 9: RB31025

NAEP #: 5-G44007-429-3

1977-78 Content Area: E. Variables and Relationships
1977-78 Objective: 2E. Algebraic Manipulations

1972-73 Content Area: G. Algebraic Expressions
1972-73 Objective: II. Perform Mathematical Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 08-29
1972-73 Package-Exercise: 08-04

Timing: (in seconds)
Exercise Total Time 26

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 17	P	21.5	17.9	19.5	17.1*	32.5*	22.4	20.8	24.8	22.5	25.2	18.5*
	SE	1.3	1.8	2.0	2.1	3.8	2.0	1.7	3.2	2.0	3.8	1.8
GRD 11	P	23.9	29.1	22.0	19.3*	35.8*	25.6	22.4	29.9	23.2	28.6	20.1*
	SE	1.5	2.6	2.5	2.4	4.5	2.7	1.8	3.6	2.7	3.5	1.9

What are the factors of $x^2 - 5x + 6$?

ANSWER ______________________

B31025-3
044007-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = (X - 2) (X - 3) WITH OR WITHOUT ( )

20 = OTHER

21 = (X + 2) (X - 3), (X - 2) (X + 3) OR (X + 2) (X + 3)

22 = 2,3 OR X = 2, X = 3

23 = -2, -3; X = -2, -3; X = 2, -3 OR -2, 3, OR OTHER INCORRECT ATTEMPT TO SOLVE $X^2 - 5X + 6 = 0$

24 = $(X^2 - 5X + 6)(1)$ WITH OR WITHOUT ( ), $X^2 - 5 + 6$, 1, OR "CAN NOT BE FACTORED"

25 = (X) (X - 5) (X + 2) (3) OR (X) (X - 5) (X + 6)

26 = (X - 6) (X + 1), (X - 1) (X - 6), (X - 1) (X + 6), (X + 1) (X + 6) OR X = +1 OR -1 AND X = +6 OR -6

27 = 1,5,6; 5,6; 2,1; 2,1,0 OR 2,1,1

39 = I DON'T KNOW.

Release #: 8BJ2132

NAEP #: 5-C50022-429-23

1977-78 Content Area: D. Variables and Relationships
1977-78 Objective: 3B. Understanding

1972-73 Content Area: B. Properties of Numbers and Operations
1972-73 Objective: II. Perform Mathematical Manipulations

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	08-07	04-02
1972-73 Package-Exercise:	08-10	04-02
Timing: (in seconds)		
Exercise Total Time	53	53

If $\frac{a}{b} = \frac{c}{d}$, then which one of the following statements is TRUE?

○ $\frac{a}{d} = \frac{b}{c}$

○ $\frac{c}{b} = \frac{a}{d}$

○ $a \times c = b \times d$

● $a \times d = b \times c$

○ I don't know.

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 13	P	21.2	19.6	23.8	20.0	21.7	19.8	23.0	17.8	22.4	31.9*	20.5
	SE	1.4	3.1	2.6	3.0	2.2	1.7	1.8	2.5	2.5	5.1	2.0
GRD 8	P	23.5	21.2	25.4	23.0	24.2	22.6	24.3	19.3	26.0	33.2	22.9
	SE	1.6	4.8	3.2	3.6	2.8	2.1	1.8	3.3	2.8	5.3	2.5
AGE 17	P	52.0	43.2*	44.7*	52.8	65.0*	50.9	53.0	52.4	54.7	63.3	48.8
	SE	1.4	2.9	2.3	2.7	2.5	2.1	1.7	3.8	3.2	8.4	1.7
GRD 11	P	55.1	47.9*	46.8*	55.3	68.7*	54.9	55.2	55.6	56.4	68.5	52.4
	SE	1.8	2.3	2.7	2.5	2.4	2.0	2.0	3.5	3.2	8.7	1.6

Release #: RB33332

NAEP #: 5-B11008-429-23

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 3B. Understanding

1972-73 Content Area: B. Properties of Numbers and Operations
1972-73 Objective: V. Using Mathematics and Mathematical Reasoning to Analyze Problem Situations, Define Problems, Formulate Hypotheses, Make Decisions, and Verify Results

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	06-07	06-39
1972-73 Package-Exercise:	06-33	06-21

Timing: (in seconds)		
Exercise Total Time	59	58

Note: This exercise was also administered to age 9 (package exercise 01-40) in the 1977-78 assessment. The administration time for age 9 respondents was 60 seconds.

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FBC	MCTY	SMPL
AGE 9	P	26.7	27.1	21.2*	29.2	28.7	27.4	26.0	25.2	26.9	28.4	27.0
	SE	1.2	2.3	2.5	2.2	2.6	1.6	1.5	2.0	3.0	5.8	2.1
GRD 4	P	29.6	30.8	23.9*	31.9	30.7	30.5	28.7	26.0	29.9	32.3	30.6
	SE	1.4	2.2	2.9	2.7	3.3	1.9	1.9	2.3	3.3	7.4	2.2
AGE 13	P	56.8	55.1	51.2*	62.6*	56.9	55.8	[illegible]7.7	52.2	64.1*	56.5	55.3
	SE	1.6	3.4	2.6	2.9	3.7	2.3	2.9	3.2	2.9	8.3	2.4
GRD 8	P	60.4	60.7	54.8	66.7*	58.9	60.5	60.4	54.7	64.2	65.6	60.3
	SE	1.8	3.9	3.4	3.5	3.6	2.7	2.3	3.8	3.2	8.2	2.5
AGE 17	P	76.4	67.0*	69.8*	84.5*	79.6	76.3	76.4	72.7	78.7	85.0*	75.9
	SE	1.3	3.2	2.2	2.0	2.3	1.5	1.6	3.3	1.7	3.3	1.9
GRD 11	P	79.1	72.8	71.5*	86.6*	81.2	81.0	77.4	76.4	78.9	86.5*	79.5
	SE	1.3	4.3	2.5	1.3	2.1	1.6	1.7	2.8	1.9	2.3	2.2

If $a > 5$ and $b > 5$, then

○ a equals b.

○ a is greater than b.

○ b is greater than a.

● there is not enough information to determine the relation between a and b.

○ I don't know.

Release #: R850423

NAEP #: 5-E10015-429-12

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2C. Graphs and Tables

1972-73 Content Area: E. Geometry
1972-73 Objective: III. Understand Mathematical Concepts and Processes

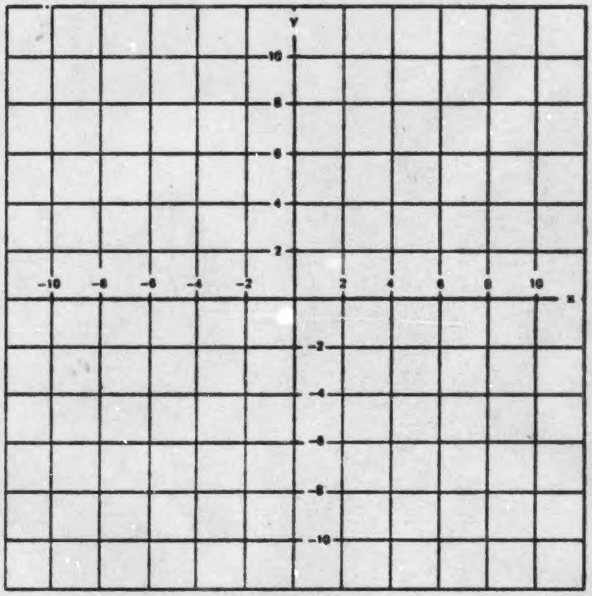
Exercise Type: Open Ended
Stimulus Type: Text/Tape/Graph

Overlap:	9	13
1977-78 Package-Exercise:	01-32	02-07
1972-73 Package-Exercise:	01-09	02-25

Timing: (in seconds)		
Exercise Total Time	31	28

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	FABC	MCTY	SMPL
AGE 9	P	0.7	0.3	0.2*	1.3	0.9	0.8	0.7	0.1*	1.1	0.3	1.0
	SE	0.2	0.3	0.2	0.7	0.5	0.3	0.4	0.1	0.7	0.3	0.4
GRD 4	P	0.9	0.5	0.0*	1.9	1.1	1.2	0.8	0.1*	1.2	0.5	1.3
	SE	0.3	0.3	0.0	1.0	0.6	0.5	0.5	0.1	0.9	0.5	0.5
AGE 13	P	19.5	12.3*	21.3	20.4	23.9	19.8	19.3	11.7*	20.9	27.1	21.5
	SE	1.9	2.6	3.5	2.8	5.3	2.4	2.1	2.4	2.6	6.5	3.3
GRD 8	P	24.6	15.7*	25.7	29.2	26.4	25.9	23.4	15.6*	23.0	31.6	28.7
	SE	2.5	3.4	4.1	4.5	6.1	3.2	2.6	3.1	2.9	8.7	4.2

Plot the point (3,2) on the graph below. Mark the point with a star *.



850423-12
E10015-12

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = POINT (3,2)

20 = OTHER

21 = POINT (2,3)

22 = ANY OTHER POINT OR MORE THAN 1 POINT

23 = (0,0) OR "THE ORIGIN"

24 = LINE THROUGH POINT (3,2), ANY OTHER LINE OR LINE AND POINT OTHER THAN (3,2)

Release #: RB50723

NAEP #: 5-M41017-429-3

1977-78 Content Area: D. Variables and Relationships
1977-78 Objective: 2C. Graphs and Tables

1972-73 Content Area: E. Equations and Inequalities
1972-73 Objective: III. Understand Mathematical Concepts and Processes

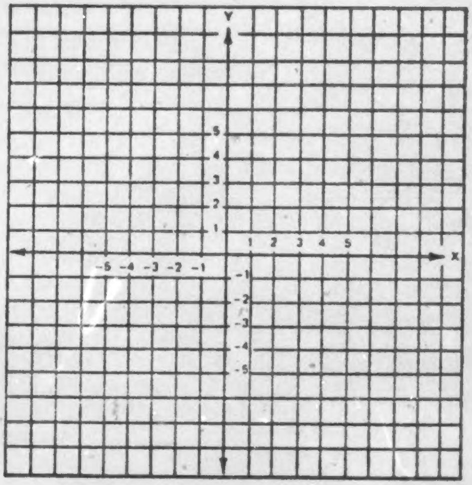
Exercise Type: Open Ended
Stimulus Type: Text/Tape/Graph

Overlap:	17
1977-78 Package-Exercise:	03-35
1972-73 Package-Exercise:	03-10

Timing: (in seconds)
Exercise Total Time 98

			REGION				SEX		COMMUNITY SIZE (DOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 17 P	18.3	13.5	13.5*	23.7*	20.1	20.7*	16.0*	19.5	25.1*	28.1	13.9*
SE	1.4	3.0	2.4	2.5	3.3	1.6	1.9	2.7	3.2	6.7	1.9
GRD 11 P	20.0	15.4	13.5*	24.8	23.3	22.7*	17.6	22.2	26.7*	30.8	14.0*
SE	1.7	3.9	2.4	3.0	4.8	1.9	2.3	3.4	3.6	8.3	2.0

Draw the graph of $y = 2x + 1$. Use the ruler you have been given to draw the graph.



N50723-3
N41017-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = CORRECT LINE (GOES THROUGH POINT (0,1) WITH SLOPE OF 2)

20 = OTHER

21 = ANY LINE THROUGH (0,1) WITH AN INCORRECT POSITIVE SLOPE

22 = LINE THROUGH (0,1) WITH SLOPE OF -2

23 = ANY LINE THROUGH (0,1) WITH NEGATIVE SLOPE EXCEPT CATEGORY 22

24 = EITHER A HORIZONTAL OR A VERTICAL LINE THROUGH (0,1)

25 = ANY LINE PARALLEL TO THE CORRECT LINE *NOT* PASSING THROUGH (0,1)

26 = ANY *NON*HORIZONTAL AND *NON*VERTICAL LINE *NOT* PASSING THROUGH (0,1) EXCEPT CATEGORY 25

27 = ANY HORIZONTAL OR VERTICAL LINE *NOT* PASSING THROUGH (0,1)

28 = MORE THAN ONE LINE

29 = GRAPHED MORE THAN ONE POINT ALL ON THE CORRECT LINE BUT LINE NOT DRAWN

39 = I DON'T KNOW.

Release #: RB50923

NAEP #: S-121001-A29-3

1977-78 Content Area: 3. Variables and Relationships
1977-78 Objective: 2E. Algebraic Manipulations

1972-73 Content Area: I. Functions
1972-73 Objective: I. Recall and/or Recognition of Definitions, Facts, and Symbols

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 09-02
1972-73 Package-Exercise: 09-04

Timing: (in seconds)
Exercise Total Time 75

A. What is the slope of the line 2y = 5x - 8?

ANSWER ______________

B. What is the y-intercept of the line 2y = 5x - 8?

ANSWER ______________

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
PART A												
AGE 17	P	14.6	9.9*	10.2*	14.9	22.6*	16.3	12.9	13.3	18.1*	23.8	10.9*
	SE	1.1	1.5	1.9	1.8	2.9	1.8	1.3	2.3	2.1	5.7	1.2
GRD 11	P	15.7	11.2	11.7*	15.4	23.7*	17.8	13.8	13.2	20.0*	23.5	12.3*
	SE	1.4	3.8	2.0	2.2	3.1	2.3	1.4	2.9	2.2	6.9	1.6
PART B												
AGE 17	P	11.2	7.7*	7.5*	12.8	15.9	12.8	9.8	8.6	17.2*	18.3	7.0*
	SE	1.1	1.5	1.4	1.6	3.2	1.3	1.2	1.6	2.2	4.6	1.1
GRD 11	P	12.2	8.3*	8.5*	13.7	17.0	14.3	10.4*	7.0*	20.4*	17.4	8.2*
	SE	1.2	1.8	1.7	2.0	3.1	1.6	1.3	1.3	2.2	5.9	1.3

B50923-3
I21001-3
PART A

SCORING GUIDE: PART A

Categories are listed below.

PART A:

00 = NO RESPONSE

11 = 2.5, 2 1/2, 5/2 OR EQUIVALENT

20 = OTHER

21 = -2.5, -2 1/2, -5/2 OR EQUIVALENT

22 = 2 OR -2

23 = 5 OR -5

24 = 8 OR -8

25 = 2/5, .4 OR EQUIVALENT

26 = -2/5, -.4 OR EQUIVALENT

27 = OTHER NUMERIC VALUES

28 = 5X/2 OR 5X

39 = I DON'T KNOW.

B50923-3
I21001-3
PART B

SCORING GUIDE: PART B

Categories are listed below.

PART B:

00 = NO RESPONSE

11 = -4, (0, -4) OR Y = -4

20 = OTHER

21 = 4, (0, 4) OR Y = 4

22 = 2 OR -2

23 = 5 OR -5

24 = 8 OR -8

25 = 5/2, 2.5, 2 1/2, (0, -2 1/2), Y = 2 1/2 OR EQUIVALENT

26 = 8/5, 1.6 OR EQUIVALENT

27 = OTHER NUMERIC VALUES

39 = I DON'T KNOW.

Release #: 051023

NAEP #: 5-I31001-029-3

1977-78 Content Area: B. Variables and Relationships
1977-78 Objective: 2C. Graphs and Tables

1972-73 Content Area: I. Functions
1972-73 Objective: III. Understand Mathematical Concepts and Processes

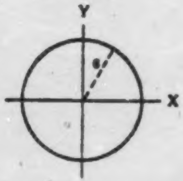
Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture

Overlap:	17
1977-78 Package-Exercise:	11-02
1972-73 Package-Exercise:	11-04

Timing: (in seconds)
Exercise Total Time 27

			REGION				SEX		COMMUNITY SIZE (DOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 17 P	3.1	1.2	2.3	1.9	7.0	3.6	2.6	3.7	4.3	10.3	0.9*
SE	0.9	0.5	1.4	1.0	3.2	1.3	0.8	2.0	1.8	6.2	0.3
GRD 11 P	3.3	1.6	2.6	2.0	7.4	3.9	2.8	4.7	3.5	11.6	1.1*
SE	1.1	0.7	1.7	1.3	3.9	1.6	0.9	2.7	1.9	7.2	0.4

The coordinates of every point (X, Y) on the circle satisfy which equation?



ANSWER ____________________

051023-3
I31001-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = $X^2 + Y^2 = 36$ $X^2 + Y^2 = 6^2$ $\sqrt{X^2 + Y^2} = 6$
OR EQUIVALENT

20 = OTHER

21 = GIVES GENERAL EQUATION FOR A CIRCLE $X^2 + Y^2 = R^2$ OR EQUIVALENT

22 = $X^2 + Y^2 = 6$

23 = $X + Y = 6$

24 = $X/Y = 6$, $Y/X = 6$, $Y = 6X$ OR $X = 6Y$

25 = $X = 6$, $Y = 6$, $X < 6$, $Y < 6$, $X \leq 6$ OR $Y \leq 6$

26 = ANY EXPRESSIONS IN X AND Y EXCEPT CATEGORIES 11 AND 21 THROUGH 25

27 = 6 OR RADIUS = 6

39 = I DON'T KNOW.

Release #: RC50546

NAEP #: 5-K10010-429-23

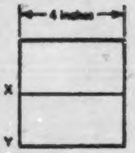
1977-78 Content Area: C. Shape, Size, and Position
1977-78 Objective: 4A. Routine Problems

1972-73 Content Area: K. Geometry
1972-73 Objective: III. Understand Mathematical Concepts and Processes

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture

Overlap:	13	17
1977-78 Package-Exercise:	09-06	11-06
1972-73 Package-Exercise:	09-26	11-25

Timing: (in seconds)		
Exercise Total Time	30	33



The square region above is separated into halves by a line parallel to the base side. What is the length of line segment XY?

ANSWER ____________________

C50546-23
K10010-23

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PADC	RCTY	SMPL
AGE 13	P	33.4	26.4*	34.5	36.7	34.8	38.2*	28.4*	34.1	34.3	38.8	31.1
	SE	1.6	2.7	1.7	2.5	4.7	2.0	1.9	2.5	2.8	6.0	2.4
GRD 8	P	37.5	32.6	36.9	42.3	37.6	43.3*	32.0*	37.3	36.8	47.0	35.6
	SE	2.0	3.2	2.7	3.0	5.4	2.6	2.2	3.2	2.9	6.3	3.1
AGE 17	P	43.6	39.3	38.2	52.8*	40.9	48.1*	39.3*	38.5	45.1	49.5	44.4
	SE	1.5	2.9	3.5	2.6	3.5	2.2	.7	3.3	3.2	4.9	1.7
GRD 11	P	46.4	41.7	39.7	55.6*	43.6	53.8*	39.8*	43.5	47.2	54.4	46.0
	SE	1.6	3.6	4.4	2.4	3.5	2.6	1.8	3.4	3.3	5.2	2.2

SCORING GUIDE

Categories are listed below.

00 = No response

11 = 2 in.

20 = Other

21 = 4 in. or 4

22 = 16 in. or 16

23 = 8 in. or 8

24 = 2 sq. in. or 2 with incorrect or no units

39 = I DON'T KNOW.

Release #: RD10811

NAEP #: 5-E10003-429-123

1977-78 Content Area: D. Measurement
1977-78 Objective: 1A. Recall and Recognition

1972-73 Content Area: E. Estimation and Measurement
1972-73 Objective: I. Recall and/or Recognition of Definitions, Facts, and Symbols

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape

Overlap:	9	13	17
1977-78 Package-Exercise:	03-05	09-03	06-37
1972-73 Package-Exercise:	03-09	09-05	06-26
Timing: (in seconds) Exercise Total Time	90	89	84

Note: The administration times for this exercise in the 1972-73 assessment were: age 9 - 86 seconds, age 13 - 85 seconds, and age 17 - 83 seconds.

A. Which is longer?

○ 2 feet
● 1 yard

○ I don't know.

B. Which is heavier?

● 17 ounces
○ 1 pound

○ I don't know.

C. Which holds more water?

○ 3 pints
● 2 quarts

○ I don't know.

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART A												
AGE 9	P	79.5	72.1*	76.5	80.2	84.8*	78.0	79.0	76.3	83.7	81.5	78.0
	SE	1.3	1.7	3.8	2.2	1.7	1.6	1.5	2.3	3.8	3.5	1.7
GRD 4	P	81.8	75.7*	78.4	85.3	86.6*	81.5	82.1	79.3	83.4	83.8	81.8
	SE	1.4	2.8	3.8	2.3	1.4	1.9	1.6	2.4	3.5	3.4	2.0
AGE 13	P	93.1	90.8	90.9	95.3*	94.4	95.0*	91.0*	93.1	92.2	92.0	93.7
	SE	0.6	1.8	1.4	0.7	1.3	0.7	0.9	1.3	1.2	2.3	1.0
GRD 8	P	93.3	91.1	91.1	95.1	94.9	95.3*	91.5*	92.6	91.8	89.7	95.5*
	SE	0.7	1.9	1.6	1.1	1.1	0.9	1.0	1.7	1.2	2.4	0.9
AGE 17	P	96.2	94.5	95.7	96.2	98.1*	96.8	95.6	93.7	96.9	97.2	96.9
	SE	0.5	1.4	1.1	0.8	0.6	0.6	0.7	1.6	0.7	2.5	0.6
GRD 11	P	96.5	95.4	96.7	95.8	98.3*	97.3	95.9	93.8	97.8	97.4	96.9
	SE	0.5	1.4	1.2	1.1	0.6	0.6	0.8	2.1	0.7	2.4	0.7
PART B												
AGE 9	P	28.9	36.3*	21.3*	27.3	31.5	30.7	27.1	29.1	28.6	28.7	29.0
	SE	1.1	2.4	2.1	1.8	2.3	1.7	1.4	2.6	3.4	4.1	1.8
GRD 4	P	28.1	33.7*	19.7*	27.3	31.6	31.4	25.1*	27.2	29.6	27.7	27.9
	SE	1.4	2.9	2.9	2.1	2.8	2.1	1.7	2.7	4.4	4.3	2.1
AGE 13	P	62.6	56.4	55.6*	65.4	71.7*	66.5*	58.6*	58.6	69.8*	68.1	60.4
	SE	1.6	3.6	2.5	3.5	2.5	1.9	2.4	3.2	3.1	3.4	3.0
GRD 8	P	68.6	62.9*	63.2*	70.0	75.8*	74.0*	63.6*	63.0	72.4	73.9	68.7
	SE	1.4	2.9	2.1	3.1	2.3	1.8	2.5	3.2	[illegible]	3.9	2.7
AGE 17	P	83.8	76.2*	78.4*	90.6*	86.3	88.1*	79.7*	75.1*	87.6*	94.6*	84.6
	SE	1.0	1.9	2.0	1.2	2.5	1.1	1.5	2.6	1.8	2.4	1.3
GRD 11	P	86.7	82.0*	80.4*	90.9*	90.4*	92.4*	81.8*	79.3*	89.1	95.1*	87.7
	SE	0.9	1.7	2.1	1.4	1.9	1.0	1.5	3.2	1.9	2.1	1.5

EXERCISE: D13011 NAEP NO: E10003-

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
PART C												
AGE 9	P	81.0	77.2*	77.6	81.6	87.3*	82.0	79.9	79.8	83.3	80.9	80.4
	SE	1.1	1.7	3.0	1.4	2.9	1.4	1.3	2.1	3.1	3.6	1.7
GRD 4	P	85.2	82.6	81.2	85.6	90.9*	86.2	84.4	82.7	88.0	86.1	84.5
	SE	1.1	2.3	2.8	2.0	1.8	1.3	1.3	2.6	2.3	2.6	1.7
AGE 13	P	91.3	90.2	89.8	90.3	95.0*	90.7	91.9	90.0	93.7	91.0	91.0
	SE	0.6	1.4	1.5	1.0	0.8	0.8	1.0	1.5	1.2	2.5	0.9
GRD 8	P	93.5	91.3	93.5	92.8	95.9*	93.3	93.7	93.2	95.5	92.8	92.8
	SE	0.6	1.4	1.1	1.2	1.0	0.9	0.8	1.5	1.1	2.2	0.8
AGE 17	P	92.7	91.7	93.0	93.2	92.5	93.3	92.1	92.9	92.9	95.1	92.2
	SE	0.6	0.9	1.4	0.9	1.5	0.7	0.8	1.3	1.3	2.0	0.9
GRD 11	P	93.6	92.2	93.8	93.7	94.5	94.3	93.0	94.7	93.7	94.0	93.1
	SE	0.5	1.4	1.1	1.0	0.9	0.9	0.9	1.1	1.1	2.5	0.9
PART D												
AGE 9	P	51.2	47.8	49.7	51.7	55.2	58.2*	44.2*	47.7	58.6*	53.3	48.7
	SE	1.7	3.4	3.9	2.7	4.2	2.3	2.2	4.2	3.8	3.1	1.9
GRD 4	P	53.1	47.6	50.7	56.6	56.5	60.1*	46.7*	50.5	60.5	52.2	51.0
	SE	1.9	3.9	3.8	2.6	4.8	2.3	2.5	4.7	4.3	3.8	2.2
AGE 13	P	82.5	74.9*	79.6	86.8*	87.1	82.7	82.3	80.3	86.8	84.8	81.5
	SE	1.3	2.8	2.5	2.1	2.8	1.2	1.9	3.0	2.2	4.4	2.2
GRD 8	P	87.8	80.9*	85.6	91.1	91.5*	86.9	88.7	86.5	89.1	88.8	87.7
	SE	1.1	2.6	2.6	1.7	2.0	1.2	1.5	2.3	1.6	2.3	2.1
AGE 17	P	95.4	93.1	94.3	96.3	97.1*	95.1	95.7	90.9*	97.0	98.7*	96.2
	SE	0.6	1.9	1.3	1.0	0.7	0.9	0.7	1.9	0.8	1.1	0.9
GRD 11	P	97.1	95.2	98.1	96.8	98.1	96.8	97.4	93.0*	98.9*	98.4	97.7
	SE	0.5	1.8	0.8	0.9	0.6	0.9	0.6	1.7	0.6	1.4	0.8
PART E												
AGE 9	P	84.8	80.9*	85.6	83.3	89.6*	83.9	85.7	83.1	87.1	87.2	84.0
	SE	1.3	2.2	1.8	1.6	2.0	1.3	1.3	1.5	3.0	1.8	1.2
GRD 4	P	86.3	82.7	86.9	85.3	90.0*	84.8	87.7	85.5	86.8	91.0*	85.6
	SE	1.2	3.6	1.7	1.4	2.1	1.6	1.5	1.4	3.7	1.4	1.3
AGE 13	P	92.5	93.9	90.9	92.7	92.5	93.3	91.7	94.1	92.3	90.8	92.0
	SE	0.8	1.3	2.2	0.6	1.7	0.7	1.4	0.8	1.9	1.3	1.4
GRD 8	P	93.8	94.8	92.2	93.6	94.3	93.8	93.7	95.3	94.0	91.7	93.2
	SE	0.7	1.3	1.6	1.4	1.5	0.9	1.0	1.2	1.6	2.4	1.3
AGE 17	P	93.6	93.5	93.4	93.8	93.5	92.8	94.4	91.4*	94.7	92.9	94.1
	SE	0.6	1.3	1.3	0.6	1.4	0.9	0.8	1.3	1.2	2.5	0.7
GRD 11	P	94.1	92.9	95.4	94.3	93.7	93.4	94.7	91.4*	95.0	93.3	94.9
	SE	0.6	1.6	0.9	0.6	1.7	1.0	0.8	1.4	1.1	3.3	0.6

(Continued)

D. Which is a longer period of time?

○ 1 month

● 5 weeks

○ I don't know.

E. Which is worth more?

● 2 dimes

○ 3 nickels

○ I don't know.

Release #: RD41321

NAEP #: 5-K52001-429-1

1977-78 Content Area: D. Measurement
1977-78 Objective: 2A. Computations or Counting

1972-73 Content Area: K. Geometry
1972-73 Objective: I. Recall and/or Recognition of Definitions, Facts, and Symbols

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 02-32
1972-73 Package-Exercise: 02-31

Timing: (in seconds)
Exercise Total Time 36

What is the AREA of a square that measures one foot on each side?

ANSWER ______________________

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 9	P	1.0	0.6	1.7	1.1	0.5	1.7*	0.3*	0.6	1.0	1.0	1.2
	SE	0.3	0.5	0.9	0.5	0.4	0.6	0.2	0.4	0.5	0.5	0.6
GRD 4	P	1.1	0.9	1.3	1.8	0.6	2.2	0.1*	0.3*	1.1	0.7	1.5
	SE	0.4	0.7	1.2	0.9	0.5	0.9	0.1	0.3	0.6	0.7	0.8

D41321-1
K52001-1

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 1 SQ. FT.

13 = 144 SQUARE INCHES

20 = OTHER

21 = 4 OR 48 WITH ANY LABEL

22 = 2 OR 24 WITH ANY LABEL

23 = 12

24 = 1 WITH NO OR WRONG UNITS

25 = 144 WITH NO OR WRONG UNITS

39 = I DON'T KNOW.

Release #: RD50632

NAEP #: 5-K20040-429-123

1977-78 Content Area: D. Measurement
1977-78 Objective: 41. Routine Problems

1972-73 Content Area: E. Geometry
1972-73 Objective: IV. Solving Mathematical Problems--Social, Technical, and Academic

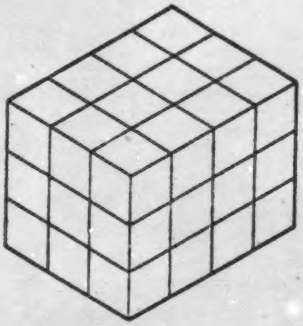
Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture

Overlap:	9	13	17
1977-78 Package-Exercise:	02-35	05-39	03-36
1972-73 Package-Exercise:	05-15	05-22	03-18

Timing: (in seconds)			
Exercise Total Time	46	37	37

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	7.0	5.8	8.4	7.0	7.2	9.8*	4.5*	4.8	9.1	6.5	7.0
	SE	1.0	1.3	3.1	0.8	2.0	1.6	0.7	1.2	2.1	1.1	1.7
GRD 4	P	8.0	6.8	10.4	8.8	6.8	11.9*	4.5*	5.7	10.0	7.3	7.9
	SE	1.2	1.6	4.1	1.1	1.9	2.2	0.8	1.7	2.3	1.5	2.3
AGE 13	P	23.5	12.3*	22.8	25.8	31.8*	28.5*	18.6*	19.5	28.9*	26.9	22.5
	SE	1.4	1.2	2.2	2.7	4.2	1.8	1.7	3.0	2.4	4.1	3.1
GRD 8	P	26.2	13.4*	24.0	29.1	35.0*	32.6*	[illegible]	24.8	29.3	29.4	24.6
	SE	1.7	2.4	2.1	2.6	5.1	2.1	2.1	3.2	2.3	3.9	4.1
AGE 17	P	39.3	31.6*	37.5	44.3*	43.9	52.4*	27.0*	35.5	44.1	33.5	38.9
	SE	1.5	2.8	4.2	2.5	2.4	1.9	1.9	4.1	2.7	6.0	2.3
GRD 11	P	41.1	32.7*	39.6	45.0	43.6	56.6*	27.8*	38.4	45.6	36.9	40.3
	SE	1.6	2.8	4.4	2.7	2.6	2.3	2.0	4.5	2.7	6.4	2.1

A rectangular solid is cut into cubes as shown. How many cubes are there?



ANSWER ______________________

D50632-123
K20040-123

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE
11 = 36 OR 36 CUBES
20 = OTHER
21 = 33
22 = 66
23 = 72
39 = I DON'T KNOW.

Release #: ED90541

NAEP #: 5-E12006-429-12

1977-78 Content Area: D. Measurement
1977-78 Objective: 4A. Routine Problems

1972-73 Content Area: E. Estimation and Measurement
1972-73 Objective: IV. Solving Mathematical Problems--Social, Technical, and Academic

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlaps:	9	13
1977-78 Package-Exercise:	01-36	06-06
1972-73 Package-Exercise:	01-22	06-29

Timing: (in seconds)		
Exercise Total Time	31	31

A piece of board is 60 inches wide. What is its WIDTH in feet?

ANSWER ______________

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 9	P	10.6	7.5*	6.6*	12.6	15.1*	12.8*	8.3*	8.8	15.6*	9.7	9.3
	SE	0.9	1.5	1.9	1.8	2.2	1.3	1.2	1.8	2.2	4.3	1.3
GRD 4	P	11.9	9.0	6.5*	10.8	15.8*	15.3*	8.8*	9.2	17.2*	10.8	10.9
	SE	1.1	1.9	2.3	2.1	2.2	1.8	1.2	2.2	2.4	3.9	1.5
AGE 13	P	60.5	47.2*	58.0	68.5*	69.6*	63.2*	57.7*	53.4	69.1*	64.7	58.9
	SE	1.9	4.8	3.7	3.1	2.7	2.3	2.2	4.8	3.2	8.2	3.3
GRD 8	P	67.2	54.3*	62.0	74.6*	74.2*	72.0*	62.9*	59.1	74.1*	75.4	65.9
	SE	1.9	4.7	4.0	3.4	2.4	2.5	2.0	4.8	3.4	6.5	3.1

D90541-12
E12006-12

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 5 OR 5 FEET

20 = OTHER

21 = 60 OR 60 FEET

22 = 12 OR 12 FEET

23 = 1 OR 1 FOOT

24 = 6 OR 6 FEET

39 = I DON'T KNOW.

Release #: RD90741

NAEP #: 5-E14005-429-23

1977-78 Content Area: D. Measurement
1977-78 Objective: 4A. Routine Problems

1972-73 Content Area: E. Estimation and Measurement
1972-73 Objective: II. Perform Mathematical Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	02-08	07-08
1972-73 Package-Exercise:	02-33	07-11

Timing: (in seconds)		
Exercise Total Time	60	61

What is the sum of the weights of the objects below?

Object A:	1 pound 4 ounces
Object B:	2 pounds 3 ounces
Object C:	5 pounds 9 ounces

ANSWER ______________________

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	MC	FABC	BCTY	SMPL
AGE 13	P	52.5	46.1*	49.1	51.1	64.0*	54.1	50.7	43.1*	57.1	59.6	53.5
	SE	1.5	2.2	3.2	2.6	3.1	2.0	2.0	3.8	2.9	6.5	2.7
GRD 8	P	59.8	55.2	56.1	56.2	66.7*	62.2	56.7	50.5*	63.6	67.6	59.6
	SE	1.6	3.0	3.5	3.0	2.6	2.4	2.1	4.0	3.5	5.3	2.7
AGE 17	P	73.3	63.2*	70.7	70.9	73.9	69.7	70.2	64.7	69.9	68.6	72.6*
	SE	1.3	2.4	3.1	1.8	2.9	1.8	1.8	3.2	1.7	6.5	1.7
GRD 11	P	72.9	65.5*	75.6	73.3	76.2	74.3	71.8	68.3	70.9	71.4	76.2*
	SE	1.3	3.3	2.2	2.0	3.4	1.5	1.9	3.3	2.3	6.6	1.4

D90741-23
E14005-23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 9 LB., 8 LBS. 16 OZ. OR 144 OZ.

20 = OTHER

21 = 9.6, 96 LBS., 9 LBS. 6 OZ., 96 OZ. OR 96

22 = 24

23 = 9 OR 144 WITH NO OR WRONG UNIT, 8 - 16 OR 8 LB. 16 (PARTIAL UNITS)

39 = I DON'T KNOW.

Release #: RD92342

NAEP #: S-K51019-029-12

1977-78 Content Area: D. Measurement
1977-78 Objective: 4A. Routine Problems

1972-73 Content Area: K. Geometry
1972-73 Objective: IV. Solving Mathematical Problems--Social, Technical, and Academic

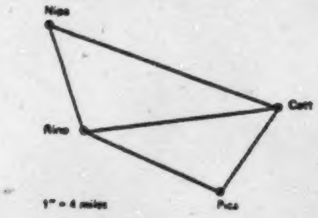
Exercise Type: Open Ended
Stimulus Type: Text/Tape/Tool for measuring

Overlap:	9	13
1977-78 Package-Exercise:	06-39	07-35
1972-73 Package-Exercise:	06-28	07-07

Timing: (in seconds)		
Exercise Total Time	42	42

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SMPL
AGE 9	P	24.8	19.8*	22.0	29.1	26.8	28.0*	21.6*	21.9	33.5*	18.5	23.3
	SE	1.4	1.7	2.6	3.2	2.3	1.8	1.9	3.3	3.6	3.2	1.6
GRD 4	P	29.9	23.3*	27.9	36.1	30.5	34.9*	25.4*	25.2	41.2*	22.6	27.9
	SE	1.8	2.7	3.0	4.3	2.6	2.2	2.4	3.5	4.3	4.2	2.2
AGE 13	P	65.6	62.7	64.7	71.0	67.3	67.4	65.8	57.3*	67.7	74.7*	69.9
	SE	1.8	4.9	2.2	3.5	3.8	2.4	2.6	4.6	3.6	4.3	2.4
GRD 8	P	73.5	71.7	72.5	76.5	72.9	75.8	71.5	67.2	72.1	83.1	76.3
	SE	1.7	3.7	2.4	3.6	4.2	1.9	2.5	4.6	3.2	4.5	2.2

In the map below, one inch represents four miles. How far is it from Rino to Cott? Use the ruler you have been given to find the answer.



ANSWER ____________________

D92342-12
K51019-12

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 8 TO 8 1/2 WITH OR WITHOUT MILES

20 = OTHER

21 = 2 TO 2 1/8 WITH OR WITHOUT MILES

22 = 4 TO 4 1/2 OR 6 TO 6 1/2 WITH OR WITHOUT MILES - NOT INCHES

23 = 10 TO 11 OR 14 TO 15 WITH OR WITHOUT MILES - NOT INCHES

24 = 2 INCHES 1/4 MILE OR 2 1/4 WITH OR WITHOUT UNITS

25 = 8 TO 8 1/2 WITH WRONG UNIT

26 = 2 TO 2 1/8 INCHES

39 = I DON'T KNOW.

Release #:   RD92542

NAEP #:   5-C50014-429-23

1977-78 Content Area: D. Measurement
1977-78 Objective: 4A. Routine Problems

1972-73 Content Area: C. Arithmetic Computation
1972-73 Objective: IV. Solving Mathematical Problems--Social, Technical, and Academic

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	04-38	02-06
1972-73 Package-Exercise:	04-30	02-23
Timing: (in seconds)		
Exercise Total Time	49	50

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	FADC	MCTY	SMPL
AGE 13	P	28.0	25.1	23.4*	32.1	30.9	31.0*	24.8*	27.9	31.4	40.2*	24.8*
	SE	1.6	3.1	2.0	3.8	3.3	2.4	1.6	2.9	3.2	5.0	2.1
GRD 8	P	31.8	30.4	27.2	35.9	33.6	36.5*	27.5*	31.6	33.4	43.8*	29.0
	SE	1.9	4.0	2.6	4.0	4.2	3.1	1.9	3.2	3.6	5.3	2.8
AGE 17	P	55.6	53.5	53.8	56.8	57.8	59.1*	52.1*	44.6*	62.2*	60.9	55.1
	SE	1.6	2.5	2.9	3.9	2.3	1.9	1.8	4.1	2.3	3.9	2.6
GRD 11	P	59.4	56.6	57.5	62.3	60.0	65.5*	53.9*	50.5*	65.7*	63.2	58.6
	SE	1.6	2.2	2.8	4.0	2.2	2.0	2.1	3.9	2.5	3.7	2.8

A car traveled eight kilometers in five minutes. At this speed, how many KILOMETERS could it travel in one hour?

ANSWER ____________________

D92542-23
C50014-23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE
11 = 96 KILOMETERS OR 96
20 = OTHER
21 = 960 KM
22 = 40 WITH OR WITHOUT LABEL OR ATTEMPTED 8 X 5
23 = 480 WITH OR WITHOUT LABEL OR ATTEMPTED 60 X 8
24 = 48 WITH OR WITHOUT LABEL OR ATTEMPTED 4 X 12
25 = 8 WITH OR WITHOUT LABEL
26 = 96 WITH WRONG UNIT
27 = ATTEMPTED 8 X 12 OR (8 X 60)/5 WITH NO OR WRONG ANSWER
39 = I DON'T KNOW.

Release #: R093243

NAEP #: 5-K50002-429-3

1977-78 Content Area: D. Measurement
1977-78 Objective: 4B. Non-routine Problems

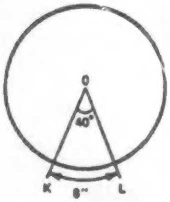
1972-73 Content Area: E. Geometry
1972-73 Objective: IV. Solving Mathematical Problems--Social, Technical, and Academic

Exercise Type: Open Ended
Stimulus Type: Text/Tape/Picture

Overlap:	17
1977-78 Package-Exercise:	05-02
1972-73 Package-Exercise:	05-08

Timing: (in seconds)
Exercise Total Time 36

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17	P	19.6	12.6*	17.2	21.5	25.3	27.6*	12.0*	19.8	25.1	13.2	17.9
	SE	1.7	2.3	2.2	4.1	3.4	2.6	1.3	3.2	4.0	3.8	2.1
GRD 11	P	20.0	13.2*	14.9	22.9	27.0	29.2*	12.1*	15.5	25.6	14.5	18.5
	SE	1.9	2.4	2.6	4.3	3.9	2.8	1.6	3.6	4.4	4.7	2.2



The circle shown above has center O. What is the circumference of the circle?

ANSWER ____________________

093243-3
K50032-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 72 INCHES OR 72"

20 = OTHER

21 = 9 WITH ANY OR NO UNITS

22 = 32 WITH ANY OR NO UNITS

23 = 36 WITH ANY OR NO UNITS OR ATTEMPTED (180/40) X 8

24 = 64 WITH ANY OR NO UNITS

25 = 320 WITH ANY OR NO UNITS

26 = 360 WITH ANY OR NO UNITS

27 = 48 WITH ANY OR NO UNITS OR ATTEMPTED 40 + 8

28 = 72 WITH ANY OR NO UNITS OTHER THAN CATEGORY 11

29 = ATTEMPTED (360 X 8) DIVIDED BY 40, 40/360 = 8/X, 40/8 = 360/X OR $\frac{360}{40}$ X 8 WITH NO OR WRONG ANSWER

39 = I DON'T KNOW.

Release #: RD93643

NAEP #: S-K53003-429-3

1977-78 Content Area: D. Measurement
1977-78 Objective: 4B. Non-routine Problems

1972-73 Content Area: E. Geometry
1972-73 Objective: IV. Solving Mathematical Problems--Social, Technical, and Academic

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	17
1977-78 Package-Exercise:	07-02
1972-73 Package-Exercise:	07-02

Timing: (in seconds)
Exercise Total Time 39

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRBC	MCTY	SSPL
AGE 17	P	9.3	6.9	7.6	12.7*	8.4	10.7*	7.9*	8.3	11.9	8.4	8.4
	SE	0.8	1.4	1.4	1.8	1.0	1.1	0.9	1.3	2.0	3.7	0.9
GRD 11	P	9.9	8.3	7.9	14.2*	7.1	11.6	8.4	8.2	11.9	10.1	9.6
	SE	0.9	1.8	1.4	2.0	1.8	1.2	1.1	1.6	2.3	4.3	1.0

How many cubic feet of concrete would be needed to pave an area 30 feet long and 20 feet wide with a layer four inches thick?

ANSWER ____________________

D93643-3
K53003-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 200, 200 CUBIC FEET OR 200 FT^3

20 = OTHER

21 = 600 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED 20 X 30

22 = 2400 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED 20 X 30 X 4

23 = 150 OR OTHER DECIMAL PLACEMENT OR ATTEMPTED 20 X 30 X 1/4

24 = 50, 54, 50 1/3, 50 1/4 OR ATTEMPTED 20 + 30, 20 + 30 + 4, 20 + 30 + 1/3 OR 20 + 30 + 1/4

25 = OTHER DECIMAL PLACEMENT OF 200 EXCEPT CATEGORY 11

26 = 200 WITH WRONG UNITS

27 = ATTEMPTED 30 X 20 X 1/3, (30 X 12 X 20 X 12 X 4) DIVIDED BY (12 X 12 X 12) OR (360 X 240 X 4) DIVIDED BY (12 X 12 X 12) WITH NO OR WRONG ANSWER

28 = 345,600 WITH OR WITHOUT UNITS OR ATTEMPTED 30 X 12 X 20 X 12 X 4

39 = I DON'T KNOW.

Release #: ND95301

NAEP #: 5-E11007-429-1

1977-78 Content Area: D. Measurement
1977-78 Objective: 4A. Routine Problems

1972-73 Content Area: E. Estimation and Measurement
1972-73 Objective: IV. Solving Mathematical Problems--Social, Technical, and Academic

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 04-04
1972-73 Package-Exercise: 04-10

Timing: (in seconds)
Exercise Total Time 38

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	29.4	22.9*	27.8	28.0	39.8*	30.4	28.4	28.3	38.3*	28.0	26.2
	SE	1.8	1.8	3.4	3.0	5.2	1.9	2.2	3.2	3.3	5.0	2.3
GRD 4	P	33.2	26.1*	31.8	33.0	41.6	35.1	31.5	29.6	41.1*	28.8	31.8
	SE	2.3	2.8	3.0	3.4	5.5	2.0	2.5	4.3	3.4	6.7	3.8

A milkman went to work at 10 p.m. He worked eight hours. What time did he finish his work?

ANSWER ______________________

D95301-1
E11007-1

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 6 A.M.

12 = 6, 6 O'CLOCK, 6:00, 6.00, 600 OR 0600 HOURS

20 = OTHER

21 = 6 P.M.

22 = 8 A.M., 8 O'CLOCK, 8, 8 P.M. OR 0800 HOURS

23 = 18

24 = 2 P.M., 2 OR 2 O'CLOCK

25 = 5 OR 7 PM OR AM

39 = I DON'T KNOW.

Release #: RE12841

NAEP #: 5-J12001-429-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: 4A. Routine Problems

1972-73 Content Area: J. Probability and Statistics
1972-73 Objective: III. Understand Mathematical Concepts and Processes

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	39-06	03-41
1972-73 Package-Exercise:	03-11	03-28

Timing: (in seconds)		
Exercise Total Time	48	48

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 13	P	27.8	20.7*	22.4	35.0*	30.8	27.7	28.0	30.7	31.2	24.9	25.2
	SE	1.9	3.0	2.7	4.2	3.9	2.1	2.1	3.7	3.5	6.4	3.3
GRD 8	P	32.4	24.8*	27.3	39.0	35.5	32.7	32.0	36.0	36.4	30.4	28.4
	SE	2.1	3.6	3.8	4.1	4.3	2.5	2.3	4.8	3.8	9.1	3.3
AGE 17	P	35.0	32.0	28.1*	42.2*	35.2	37.0	33.2	35.9	36.1	44.8*	33.1
	SE	1.5	3.4	2.3	2.0	3.6	2.1	2.1	4.0	3.1	2.3	1.7
GRD 11	P	37.3	36.5	28.2*	43.5*	36.9	40.4	34.0	37.6	36.9	51.3*	35.4
	SE	1.7	3.4	3.1	2.4	4.0	2.6	2.2	4.2	3.3	4.8	2.0

2, 3, 4, 4, 5, 6, 8, 8, 9, 10

For a party game each number shown above was painted on a different Ping-Pong ball, and the balls were thoroughly mixed up in a bowl. If a ball is picked from the bowl by a blindfolded person, what is the probability that the ball will have a 4 on it?

ANSWER ______________________

R12841-23
J12001-23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE
11 = 1/5, 2/10 OR 1 OUT OF 5
12 = 20%
20 = OTHER
21 = 2/8, 1/4 OR 25%
22 = 1/8 OR 12 1/2%
23 = 1/10 OR 10%
24 = 2/4 OR 50-50
25 = 1:5
26 = 2:8, 1:4, 1 TO 4 OR 2 TO 8
39 = I DON'T KNOW.

Release #: MX12944

NAEP #: 5-J13001-429-3

1977-78 Content Area: F. Other Topics
1977-78 Objective: 4B. Non-routine Problems

1972-73 Content Area: Q. Methods of Representing Data
1972-73 Objective: IV. Solving Mathematical Problems--Social, Technical, and Academic

Exercise Type: Multiple Choice
Stimulus Type: Text/Tape/Table

Overlap:	17
1977-78 Package-Exercise:	02-07
1972-73 Package-Exercise:	02-26

Timing: (in seconds)
Exercise Total Time 107

Note: The administration time for this exercise in the 1972-73 assessment was 104 seconds.

			REGION				SEX		COMMUNITY SIZE (DOC)			
	NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17 P	10.3	7.5*	10.9	11.6	10.4	10.2	10.4	8.0	11.6	13.3*	9.8
SE	0.8	0.8	1.2	1.7	2.3	1.2	1.1	1.3	2.1	1.1	1.3
GRD 11 P	10.6	6.4*	12.1	13.0	9.1	11.5	9.7	8.5	13.0	12.6	9.5
SE	1.0	1.1	1.6	2.0	2.1	1.4	1.2	1.3	2.5	1.6	1.4

The table below shows, for each of four age groups, the number of injuries to pedestrians and the total number of injuries related to motor vehicles which occurred during 1970.

Age Group	Pedestrian Injuries	Total Number of Injuries
15-24	25,000	700,000
25-44	20,000	670,000
45-64	30,000	350,000
65-74	8,000	70,000

According to these statistics, which age group had the fewest number of pedestrian injuries per total number of injuries?

○ 15-24

● 25-44

○ 45-64

○ 65-74

○ I don't know.

Release #: RE13043

NAEP #: 5-J10009-429-3

1977-78 Content Area: E. Other Topics
1977-78 Objective: 4B. Non-routine Problems

1972-73 Content Area: J. Probability and Statistics
1972-73 Objective: V. Using Mathematics and Mathematical Reasoning to Analyze Problem Situations, Define Problems, Formulate Hypotheses, Make Decisions, and Verify Results

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 06-32
1972-73 Package-Exercise: 06-04

Timing: (in seconds)
Exercise Total Time 64

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 17	P	15.4	6.9*	13.7	19.4*	19.0*	19.8*	11.2*	13.1	21.4*	19.6	12.7*
	SE	1.1	1.6	1.2	2.6	1.4	1.2	1.3	2.9	2.3	2.4	1.2
GRD 11	P	17.2	8.0*	16.7	20.8*	20.0	23.2*	12.0*	15.6	22.6*	19.9	14.5
	SE	1.2	2.2	1.4	2.5	2.2	1.4	1.5	3.4	2.1	1.0	1.7

A combination lock on a trunk has three dials, one showing all 26 letters of the alphabet and the other two showing the 10 digits 0 to 9. Assuming that a combination uses a setting on all three dials, how many different combinations are possible?

ANSWER ____________________

E13043-3
J10009-3

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 2600 OR 2600 COMBINATIONS

20 = OTHER

21 = 260

22 = 46, 45, 44, 43 OR ATTEMPTED 26 + 10 + 10, 26 + 10 + 9, 26 + 9 + 9 OR 26 + 9 + 8

23 = 2340 OR ATTEMPTED 26 X 10 X 9

24 = 2106 OR ATTEMPTED 26 X 9 X 9

25 = 1872 OR ATTEMPTED 26 X 9 X 8

26 = 468 OR ATTEMPTED 26 X 18

27 = 3

28 = ATTEMPTED 26 X 10 X 10 WITH NO OR WRONG ANSWER

39 = I DON'T KNOW.

Release #: RE13201

NAEP #: 5-J11003-429-3

1977-78 Content Area: E. Other Topics
1977-78 Objective: *A. Routine Problems

1972-73 Content Area: J. Probability and Statistics
1972-73 Objective: IV. Solving Mathematical Problems--Social, Technical, and Academic

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 17
1977-78 Package-Exercise: 11-01
1972-73 Package-Exercise: 11-02

Timing: (in seconds)
Exercise Total Time 30

If each of the six teams in a bowling league plays every other team ONCE, how many games will be played in all?

ANSWER ____________________

E13201-3
J11003-3

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FABC	MCTY	SMPL
AGE 17	P	4.8	2.0*	5.1	7.2	3.8	5.5	4.1	7.2	6.5	2.1	2.9*
	SE	0.7	1.2	1.8	1.6	0.9	1.1	0.8	1.8	2.3	1.5	0.8
GRD 11	P	5.6	1.9*	5.9	8.3	4.5	6.1	5.1	7.9	7.7	2.1	3.6*
	SE	0.8	1.0	1.9	1.9	1.2	1.2	1.0	2.0	2.3	2.0	1.0

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 15

20 = OTHER

21 = 3

22 = 5

23 = 6

24 = 12

25 = 18

26 = 30 OR ATTEMPTED 6 X 5

27 = 36, 6^2 OR ATTEMPTED 6 X 6

28 = 6!, 720 OR ATTEMPTED (6) (5) (4) (3) (2) (1)

29 = $\frac{6!}{4!}$, ${}_6P_2$, $\frac{(6)(5)(4)(3)(2)(1)}{(4)(3)(2)(1)}$, P^6_2, $\frac{6!}{2!\,4!}$, C^6_2 OR $\binom{6}{2}$

39 = I DON'T KNOW.

Release #: RE21441

NAEP #: 5-J21009-429-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: 4A. Routine Problems

1972-73 Content Area: J. Probability and Statistics
1972-73 Objective: I. Recall and/or Recognition of Definitions, Facts, and Symbols

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	05-41	09-09
1972-73 Package-Exercise:	05-33	09-23

Timing: (in seconds)		
Exercise Total Time	68	68

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	RC	PARC	MCTY	SMPL
AGE 13	P	10.2	7.0*	10.4	9.5	13.7	9.7	10.6	9.0	13.5	19.6	7.5
	SE	1.1	1.5	2.5	1.3	2.9	1.3	1.5	1.9	2.0	5.8	1.3
GRD 8	P	11.7	8.3	12.8	9.7	15.2	11.5	11.8	9.7	14.1	23.6	8.8
	SE	1.4	2.2	3.4	1.8	3.3	2.3	1.6	2.4	2.3	7.5	1.7
AGE 17	P	16.1	15.5	16.0	15.9	17.0	17.4	14.8	12.5*	16.5	28.5*	14.9
	SE	1.0	1.8	1.8	1.4	3.2	1.6	1.2	1.2	1.5	4.9	1.3
GRD 11	P	16.5	16.1	17.5	16.1	16.5	18.2	15.0	13.1	17.0	27.6	15.4
	SE	1.1	2.0	2.1	1.7	3.3	1.8	1.3	1.7	1.8	6.2	1.6

Nine applicants for a secretarial job typed the following words per minute on a typing test:

58, 48, 72, 65, 73, 76, 72, 63, 67.

If the employer considers only those who scored at or above the MEDIAN of this group, he will not employ anyone who scored below

ANSWER ________________________

E21441-23
J21009-23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = 67 OR (48, 58, 63, 65)

20 = OTHER

21 = 76

22 = 73

23 = 72

24 = 66

25 = 65

39 = I DON'T KNOW.

Release #: E40511

NAEP #: 5-D20011-429-23

1977-78 Content Area: E. Other Topics
1977-78 Objective: 1A. Recall and Recognition

1972-73 Content Area: D. Sets
1972-73 Objective: I. Recall and/or Recognition of Definitions, Facts, and Symbols

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap:	13	17
1977-78 Package-Exercise:	04-39	03-37
1972-73 Package-Exercise:	04-32	03-21
Timing: (in seconds) Exercise Total Time	47	49

Note: The administration times for this exercise in the 1972-73 assessment were: age 13 - 49 seconds, and age 17 - 50 seconds.

Set R = {5, 7, 9, 11}

Set S = {7, 9, 11, 13, 15}

What is the INTERSECTION of Set R and Set S?

ANSWER ____________________

		NAT	REGION				SEX		COMMUNITY SIZE (DOC)			
			SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 13	P	55.4	49.8	53.9	58.3	59.3	51.8*	59.2*	57.5	62.6	55.7	50.9
	SE	2.4	4.5	4.3	5.8	4.3	2.6	2.8	3.4	4.1	5.9	4.1
GRD 8	P	60.9	57.9	58.9	61.8	64.4	58.6	63.1	65.6	65.7	61.7	55.5*
	SE	2.4	5.0	4.3	5.3	4.2	2.8	2.5	3.9	4.4	4.8	3.9
AGE 17	P	71.5	65.6*	67.1	76.0*	74.9	69.0	73.8*	67.7	76.8*	65.2	70.9
	SE	1.4	2.4	4.4	1.7	2.2	1.8	1.9	2.9	2.6	4.9	2.5
GRD 11	P	75.6	71.5	74.7	77.5	77.0	73.7	77.2	73.7	79.6	72.9	74.5
	SE	1.3	2.9	3.3	2.1	1.6	1.9	1.7	2.7	2.4	5.3	2.2

E40511-23
D20011-23

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = {7, 9, 11}: ANY ORDER OF THESE NUMBERS WITH BRACES

12 = 7, 9, 11: ANY ORDER OF THESE NUMBERS WITHOUT BRACES

20 = OTHER

21 = {5, 7, 9, 11, 13, 15} OR {5, 7, 7, 9, 9, 11, 11, 13, 15}: ANY ORDER OF THESE NUMBERS WITH OR WITHOUT BRACES

22 = {7, 7, 9, 9, 11, 11}: ANY ORDER OF THESE NUMBERS WITH OR WITHOUT BRACES

23 = {5, 13, 15}: ANY ORDER OF THESE NUMBERS WITH OR WITHOUT BRACES

24 = SET R, R, {5, 7, 9, 11}, SET S, S OR {7, 9, 11, 13, 15} WITH OR WITHOUT BRACES

25 = SET R + SET S OR {R, S}

39 = I DON'T KNOW.

Release #: RE40911

NAEP #: 5-D20005-429-1

1977-78 Content Area: E. Other Topics
1977-78 Objective: 1A. Recall and Recognition

1972-73 Content Area: D. Sets
1972-73 Objective: II. Perform Mathematical Manipulations

Exercise Type: Open Ended
Stimulus Type: Text/Tape

Overlap: 9
1977-78 Package-Exercise: 02-34
1972-73 Package-Exercise: 05-04

Timing: (in seconds)
Exercise Total Time 36

			REGION				SEX		COMMUNITY SIZE (DOC)			
		NAT	SE	WEST	CENT	NE	MALE	FEM	BC	FRNG	MCTY	SMPL
AGE 9	P	7.9	6.1	9.0	6.7	10.2	7.6	8.3	9.1	9.4	9.4	6.3
	SE	1.0	0.8	2.7	1.6	2.3	1.2	1.2	2.0	2.4	4.7	0.7
GED 4	P	8.6	7.3	11.2	5.4*	10.3	8.4	8.8	8.8	11.5	10.9	6.3*
	SE	1.3	1.3	3.8	1.3	2.8	1.7	1.5	1.8	3.0	7.1	1.0

Set X = {1, 6}

Set Y = {5, 4, 3}

Write the set that is the UNION of Set X and Set Y.

ANSWER ______________________

R40911-1
D20005-1

SCORING GUIDE

Categories are listed below.

00 = NO RESPONSE

11 = {1, 3, 4, 5, 6}

12 = 1, 3, 4, 5, 6 OR ANY OTHER ORDER WITHOUT BRACES OR {1,6}{5,4,3}

20 = OTHER

21 = 5

22 = 19, X = 7 AND Y = 12 OR 7 AND 12

23 = (X, Y), (SET X, SET Y) OR X ∪ Y

24 = SET Y, Y, {5, 4, 3}, SET X, X, {1, 6}, 7 OR 12

25 = NONE, { }, ∅ OR THE EMPTY SET

39 = I DON'T KNOW.

☆ GPO: 1979--677-054/9